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ABSTRACT

This document contains plans for 31 lessons intended to develop thinking skills using library media center materials primarily in the areas of language arts and social studies. Designed for various grade levels in the K-12 range, each of the lessons contains the following components: (1) behavioral and thinking skills objectives; (2) desired disposition and/or attitudes regarding the lesson experience; (3) lesson plan core, including the immediate purpose of the lesson, student background knowledge, student activities, instructional materials, instructional techniques, lesson sequence, and metacognition; and (4) transfer, including descriptions of additional applications of the thinking skills and follow-up activities. The appendix includes a grade use chart for the lesson plans, a list of 10 software packages which promote thinking skills, descriptions of 7 software packages for critical thinking practice, and a 40-item annotated bibliography. (MES)

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COOPERATIVE DEVELOPMENT OF THINKING SKILLS

INSTITUTE # 457

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INSTITUTE FOR TEACHING AND LEARNING

Purpose: To offer professional development experiences to
Connecticut teachers and educational leaders by providing
training sessions which offer practical classroom
application of current research about teaching.

COOPERATIVE DEVELOPMENT OF THINKING SKILLS

INSTITUTE #457

Emphasizing the Cooperative Effort Between
Library Media and Classroom Teachers

Report edited by: Dr. Mary Ann Pellerin
Central Connecticut State University

Designed by: Dr. Hilda L. Jay and Bernice Yesner

Taught by: Dr. M. Ellen Jay, Page Elementary School
Silver Spring, MD

Emma Lou Benedict, East Ridge Middle School
Member: Connecticut State Department of Education Critical
Thinking Committee

Priscilla Anselmo, Ridgefield High School

Barbara Groves, East Ridge Middle School
Ridgefield, Connecticut

April 1987

Final Product

Participants in the Institute prepared lesson plans cooperatively. Emphasis focused on applying thinking skills to the use of library media center materials concentrating mostly on the curricular areas of Language Arts and Social Studies. These lesson plans have been field tested in participants' schools throughout the fall and winter terms. At the follow-up sessions successes and problems were discussed and lesson plans were modified in accordance with use experiences.

In order to make these revised lesson plans available to all interested teachers, they are being recorded in microform. Information regarding additional copies of the microfiche is available from:

Cooperative Educational Services
11 Allen Road
Norwalk, CT 06851.

Editor's Note

The plans contained in this collection represent a variety of approaches toward construction of lessons incorporating thinking skills and based on the Master Format presented at the outset of the Institute. The variations include working plans in which certain areas are not addressed, and complete plans based on field testing experiences. In addition, several documents show other approaches to creating lesson plans that address thinking skills.

MASTER FORMAT FOR WRITING LESSON PLANS

I. Objective

  A. Behavioral objective
  B. Thinking skills

II. Disposition/Attitudes

III. Lesson Plan Core

  A. Immediate purpose of lesson
  B. Student background knowledge (prior knowledge and skills)
  C. Student activities
  D. Instructional materials
  E. Instructional techniques
  F. Lesson sequence
  G. Metacognition

IV. Transfer
  A. Application of these thinking skills
  B. Follow up activities

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Lesson Plans

Designed by
Priscilla Anselmo and Monica McMorran
Library Media Teachers
Ridgefield High School

For Grade Eleven

American Authors: Junior Research Paper

For Grade Twelve

International Relations: Research Techniques

RIDGEFIELD HIGH SCHOOL LIBRARY-MEDIA CENTER

Junior English Research Paper

American Authors

Lesson Plan Outline	Critical Thinking Skills Used
1. Literary Handbooks* A. In class 1. Brainstorming-theoretical 2. Sample handbook article 3. Brainstorming-practical 4. Handbook survey B. Library followup 1. Read handbooks 2. Fill out handbook worksheet and bibliography cards 3. Develop tentative thesis statement	1. Determine relevant information 2. Classify data 3. Recognize relationships 4. Make inferences 5. Determine cause and effect 6. Clarify
II. Biographical sources (Who?) A. In class 1. Author Biographies Master Index-worksheet 2. Biographical reference sets 3. Biography Index, NY Times Personal Names Index-worksheet B. Library followup	1. Distinguish fact from opinion 2. Judge reliability of sources 3. Detect bias, stereotypes 4. Recognize inconsistencies in informatio 5. Make inferences
III. Literary and social histories (When? Where?) A. In class 1. Literary histories a. by time period b. by movement c. by genre d. by theme e. by region 2. Social histories-How times and events shape author B. Library followup	1. Determine cause and effect 2. Reason by analogy 3. Make inferences 4. Determine relevant information 5. Recognize relationships 6. Distinguish between fact and opinion 7. Judge reliability of source
IV. Critical sources (Why? What?) A. In class 1. Critical reference sets 2. Monographs 3. Essay and General Literature Index, Book Review Digest 4. Specialized periodicals B. Library followup	1. Identify central issues and problems 2. Recognize underlying assumptions 3. Detect bias, stereotypes 4. Recognize loaded language 5. Compare similarities and differences 6. Evaluate hypotheses

***Cross referencing and use of chronologies included.**

LITERARY HANDBOOK LESSON PLAN

"In Search of Why"

This lesson plan is the first section of a four-part lesson plan which introduces students to the sources they need to complete the junior research paper. An outline of the complete lesson is attached. Each section of the lesson includes a classroom brainstorming and/or lecture session, as well as a follow-up library activity.

OBJECTIVES

At the conclusion of the in-class session taught by the teacher-librarian,

1. students will identify and locate appropriate literary handbooks in the library;
2. students will read handbook articles and extract relevant data;
3. students will classify the data using the format given;
4. students will recognize relationships, make inferences, and determine cause and effect from the data extracted and classified.
5. students will demonstrate their use of the preceding critical thinking skills by developing a preliminary thesis statement.

DESCRIPTION OF ACTIVITIES

Classroom exercises

(Objective #1: Identify) The teacher-librarian explains that literary handbooks are to the English research paper what encyclopedias are to social studies - a starting point. Characteristics of literary handbooks are identified - overall views, brevity, chronologies, cross references, definition of terms. Samples of handbooks are shown.

(Objective #2: Data gathering) The teacher-librarian writes the following categories in six columns across the blackboard: Who, What, When, Where, Why, Words (see attached sample sheet A). Students are instructed that when they look for information on an author, they must try to find as much as possible using these categories. The teacher-librarian and the students brainstorm as to what types of information fit into each category, with the teacher-librarian continually asking, "Why is that important?"

Students are then handed copies of an article from a literary handbook (see attached sample sheet B). They are asked to read it carefully and underline relevant data.

(continued)

(Objective #3: Classifying) Students are asked to brainstorm once again. They call out relevant information from the article and indicate where they feel it belongs. The teacher-librarian fills in the columns on the blackboard.

(Objective #4: Recognizing relationships, Making inferences) The teacher-librarian asks students volunteering information to explain why they chose it as being relevant. The teacher-librarian and the students together look for relationships and indicate them by connecting the data in different columns with arrows (see attached sample sheet C).

(Objective #5: Clarifying) The teacher-librarian and the students together develop possible thesis statements based on the information given in the article.

Library-Media Center exercise

(Objectives #1-4) Students come to the Library-Media Center as a class group. They locate at least two articles from two literary handbooks and do the previous day's exercises on their own, filling out blank "6 W" sheets. The teacher-librarians and the classroom teacher observe and evaluate this activity, identifying students who are having difficulties.

Independent exercise - Evaluation

(Objective #5) Students demonstrate their use of the preceding critical thinking skills by developing a preliminary thesis statement.

SAMPLE BRAINSTORMING LEADS:

1. Who has significant influence on the author? Why is this important?

2. Does the author have an influence on history? On other writers?

3. Are the author's works a reflection of events in his/her lifetime? Why?

4. Is the author known for a particular literary style? Which?

5. Would you place the author within a particular literary movement? Why?

6. Does it matter who else was writing during the author's lifetime? Why?

7. Does a national or international event during an author's lifetime have any significance in terms of the author's experience and/or writing? Why?

8. Why is it necessary to know where the author spent his/her formative years? Productive years?

9. Can the author be classed as a regional writer? Why?

10. Do the author's themes reflect life experience? How?

11. If the author's work a social commentary on the age?

12. Are there any literary terms you don't understand? What are you going to do about them?

HANDBOOKS (C)

WHO	WHAT	WHEN	WHERE	WHY	WORDS
Author- Nationality Family Friends People influenced by author People who influenced author	Literary genre Literary style Works published	Birth date Death date Events in life Literary movements Social history	Birthplace Travels Influence of area of primary residence Regional writer Literary and social history of area	Themes	Definitions
		WILLIAM D. HOWELLS			
American Father - Newspaperman John James Platt Oliver Wendell Holmes, James Russell Lowell, J. J. Platt-influenced career Tolstoy, Henry George, Zola-influenced Howells Garland, Dunbar, S. Crane, Norris, Herrick-Howells influenced Mark Twain, Henry James -friends	Poems of 2 friends Campaign biography of Lincoln Venetian Life Italian Journeys Rise of Silas Lapham Indian Summer (2 best) Annie Kilburn A Hazard of New Fortunes Genres-poems novels plays short stories criticism travel books memoirs	1837-1920 Appt. U.S. Consul-Venice 1861-65 1865-81 "Atlantic Monthly" 1888 - N. Y. Haymarket Riots Homestead Strike 1890 Spanish-American War - opposed	Birthplace - Ohio Childhood - Ohio Italy Boston New York	Frontier egalitarianism Contrast between Americans & Europeans, factor of social position Comedy of manners Searching character studies & moral dilemmas of his time Socialism Comment on economic system Decay of moral and ethical standards in a competitive society Faintly old-maidish quality - never wholly at ease with literature that could not be read aloud to family	Frontier egalitarianism Comedy of manners

Sample Student Notetaking Worksheet:

This information was taken from the entry on W. D. Howells found in The Cambridge Guide to English Literature. New York: Cambridge University Press, c1983. p. 422-423.

Handbooks

Cambridge Guide to English Literature. New York: Cambridge University Press, 1983.

Dictionary of Literary Terms. New York: Doubleday, 1977.

Handbook to Literature. Indianapolis: Odyssey Press, 1972.

Encyclopedia of Frontier and Western Fiction. New York: McGraw Hill, 1982.

Encyclopedia of Mystery and Detection. New York: McGraw Hill, 1976.

The Oxford Companion to American Literature. New York: Oxford University Press, 1983.

The Oxford Companion to Children's Literature. New York: Oxford University Press, 1984.

The Oxford Companion to the Theatre. New York: Oxford University Press, 1983.

The Readers' Encyclopedia. New York: Thomas Y. Crowell, 1965.

The Readers' Encyclopedia of American Literature. New York: Thomas Y. Crowell, 1962.

The Readers' Encyclopedia of World Drama. New York: Thomas Y. Crowell, 1969.

Supplementary books to use if there are more students than handbooks.

The American Heritage History of the Writers' America. New York: American Heritage, 1973.

Black Writers of America. New York: MacMillan, 1972.

Dictionary of American Negro Biography. New York: W. W. Norton, 1982.

Encyclopedia of World Literature in the 20th Century. New York: Frederick Ungar, 1981.

Harvard Guide to Contemporary American Writing. Cambridge: Belknap Press, 1979.

Notable American Women - Modern America. Cambridge: Belknap Press, 1980.

American Women Writers; From Colonial Times to the Present. New York: Frederick Ungar, 1982.

Science Fiction Writers. New York: Charles Scribners Sons, 1983.

Southern Writers: a Biographical Dictionary. Baton Rouge: Louisiana State University Press, 1978.

Supernatural Fiction Writers. New York: Charles Scribners Sons, 1985.

Makers of Modern Culture. New York: Facts on File, 1981.

Makers of 19th Century Culture. New York: Facts on File, 1982.

INTERNATIONAL RELATIONS - RESEARCH TECHNIQUES

Ridgefield High School Library

BACKGROUND:

This assignment is given every year in the International Relations class, an advanced placement course in the social studies department. The assignment consists of three major phases: a preliminary bibliography on a topic in the area of of international relations, a research paper on the same or a different topic, and a class presentation during which the student must defend his paper to the rest of the class (who have read and prepared questions on it.) The library staff at Ridgefield High School is involved with the first and second stages only.

Topics are drawn out of a hat. The first part of the year-long assignment is to compile an extensive bibliography of all possible sources, using not only the high school library, but any other library the student can get to. The librarians are requested not to help the students in any way, as the teacher would like this first search to be both a learning and a humbling experience.

The classroom teacher and the librarians then evaluate the bibliographies for inclusiveness. The majority of the students receive a "C", a few receive "B", and once in a while, someone who has transferred research skills from previous years receives an "A".

The next segment of the assignment occurs after the classroom teacher has returned the bibliographies and students have had a chance to wail about the grades. The librarians go into the classroom prepared to show some of the brightest students in the school what they have overlooked and how they can correct their approach to research.

RESEARCH TECHNIQUES PRESENTATION

I. Objectives

A. Content - Behavorial objectives

1. Students will be able to demonstrate the correct approach to research and its applicability to any subject area.

2. Students will be able to identify which resources to use in order to complete the assignment.

B. Thinking skills that students will be made aware of and learn to use for this assignment:

1. Critical thinking skills actually used during the classroom presentation:
    - a. Problem solving - Students must clarify the problem, formulate appropriate questions, generate related ideas.
    - b. Decision making - Students will state the desired goal and any obstacles; they will begin to learn how to identify, examine, rank, and choose the best resources available to them in the high school library.
    - c. Divergent thinking skills - Students will be able to list attributes of the situation, generate multiple ideas, different ideas, unique ideas, detailed ideas, and synthesize all this information.

2.Critical thinking skills that are identified and introduced to students during the class presentation but which students must use during their independent research:

- a. Inferences - Induction - Students will determine cause and effect and relevant information, make inferences and recognize relationships.
- b. Inferences - Deduction - Students will learn to spot contradictory statements
- c. Evaluative thinking skills - Students will learn to distinguish between fact and opinion, judge the reliability of a source, detect bias and loaded language, classify data, demonstrate sequential synthesis of information, compare similarities and differences.

2. Dispositions

The students will have received their preliminary bibliographies with their grades. They will be disappointed and somewhat discouraged. The librarians want to make clear to them that the grades received are typical, that the research they are expected to do is difficult. Because advanced placement students are frequently reluctant to take risks, we tell them that we expect them to participate fully in a brainstorming session in which no judgement will be passed.

II. Lesson plan core

A. Immediate purpose of the lesson

The librarians tell students that they are there to provide them with a search strategy and the types of library resources that will help them to complete the second phase of the assignment, which is to actually write a research paper on an international relations topic of their choice.

B. Student background knowledge

Class participation is a requirement in this course. Students have attempted to do research on their own without any guidance from the library staff. The teacher has told them that they will learn from their mistakes. The librarians briefly explain problem solving and divergent thinking skills that the students are expected to demonstrate during this class session. Students have studied IR subject matter for approximately 3 months.

C. Student activities

The librarians ask the students what source they use when they want information on something they know nothing about. They readily answer, "The encyclopedia."

Each student is given a photocopy of an encyclopedia article on Grenada, asked to read it and told to underline the information that he/she feels is the most significant.

Two students are selected from the class to record the answers during the brainstorming session on 4x6 Post-it pads. The librarian asks the class to volunteer what they feel is significant information in the article. The student recorders write the answers on the pads and affix them to the blackboard.

When all possible answers have been recorded, the librarian asks the students to think about the answers and categorize them into 5 major groups. Most of the time, since we have been instructing these students since 9th grade, they recognize immediately that they can be classified into Who, What, When, Where, Why. The student recorders put the post-it pads into appropriate columns as directed by the class.

Next, the librarian asks the students to think about each of those questions, expanding on them and explaining why they are important. For example:

WHO are the people involved? Who has had an influence on the situation? Who has been affected?

WHAT exactly has happened? Is the sequence of events important? Why?

WHEN did it happen? What else was going on in foreign affairs at that time? Have any previous events had an effect? Would it have happened at another time? Would it have been the same?

WHERE did the event or situation occur? Is there any significance to the geographic location? Would the same or similar event have occurred elsewhere?

WHY is this topic important? What impact did it have or does it have now? Was it resolved? How does it relate to other events of the time? Should it have been handled differently? How was it regarded by the experts? What is your opinion?

As these questions are being generated by the students and librarian, the librarian is simultaneously webbing on the blackboard. (See sample sheet attached).

D. Instructional materials

photocopies (one per student) of an encyclopedia article on Grenada (or any other IR topic)

4x6 post-it pads and dark markers

E. Instructional techniques

Combination of lecture, seatwork, class participation, with emphasis on class participation.

F. Lesson sequence outline

1. Introduction of objectives
2. Silent reading and interpretation of article
3. Class brainstorming session, with 2 students acting as recorders
4. Classifying of information by students
5. Divergent thinking in the second brainstorming session, as students expand on the previous answers
6. Webbing by librarian in conjunction with brainstorming by students
7. Review by librarian of relevant library materials that will help answer the questions raised by the students

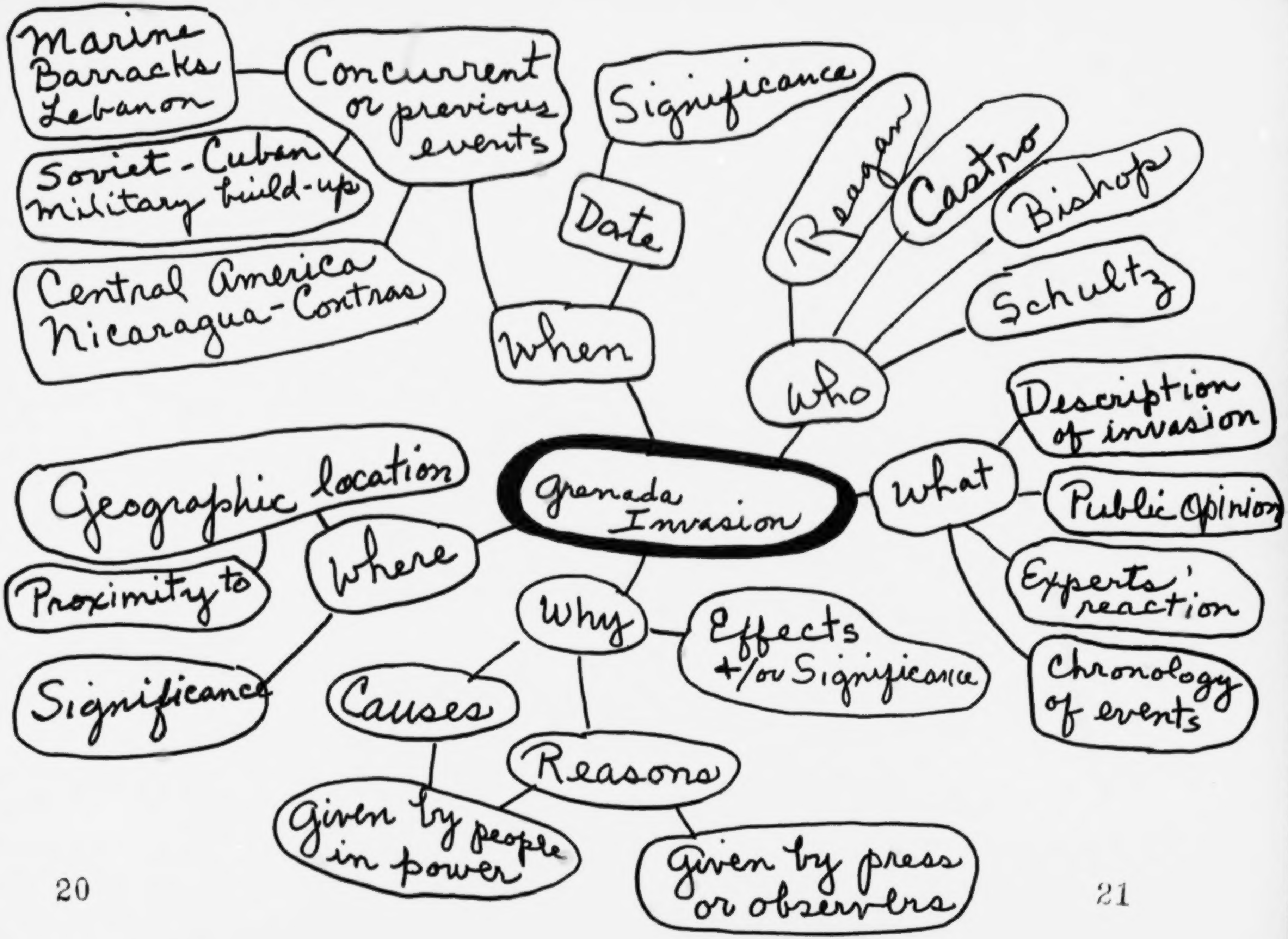
G. Metacognition

Students are made aware of all the critical thinking skills they will be employing during the class session, which may take more than the usual 45 minute period. As the webbing is drawn on the board, the librarian constantly draws their attention to the connections they are making.

During the discussion of relevant sources to use, the librarian points out the critical thinking skills they must use when they are actually researching their topic: the inferences and evaluative thinking skills mentioned earlier.

III. The importance of transferring these skills is emphasized when the librarian points out that those students who received the highest grades on the preliminary bibliographies were those who had transferred their knowledge of research techniques and library resources from previous years to the current assignment.

The techniques used in this class presentation are used now with almost every research assignment. It has taken a few years to develop this approach, and it is still evolving. Webbing was used for the first time during the 1985-86 school year. It wasn't until this school year that students have begun to use the technique on their own after seeing it presented in class.


Grenada Invasion
When
Date
Significance
Concurrent or previous events
Marine Barracks Lebanon
Soviet-Cuban military build-up
Central America Nicaragua-Contras
Who
Reagan
Castro
Bishop
Schultz
What
Description of invasion
Public Opinion
Experts' reaction
Chronology of events
Where
Geographic location
Proximity to
Significance
Why
Effects +/or Significance
Causes
Reasons
Given by people in power
Given by press or observers

Lesson Plan for Grade Two

Comparing and Contrasting Communities

A Mini-Unit Integrating Social Studies and Writing

Brenda Ashmore
Classroom Teacher
Redding Elementary
Redding

I. Objective

- A. Behavioral objectives
  Students will be able to:
  - 1. Recognize and name features and activities common to all communities
  - 2. Compare and differentiate communities according to stated criteria
  - 3. Incorporate facts about communities in order to form questions seeking information about another community
  - 4. Transfer their knowledge and questioning skills to a writing activity
- B. Thinking skills
  - 1. Recalling information about their own community
  - 2. Identifying relationships and patterns
  - 3. Identifying attributes and components
  - 4. Comparing and contrasting
  - 5. Grouping and classifying
  - 6. Summarizing and integrating
  - 7. Probabilistic reasoning
  - 8. Inferring

II. Disposition/Attitudes

- A. Non-judgmental atmosphere nurturing -
  - 1. open-mindedness
  - 2. brainstorming
  - 3. risk-taking
  - 4. discussion activity
  - 5. interaction
  - 6. communication
- B. Non-threatening atmosphere for individual work
- C. Students will be encouraged to ask questions
- D. Time to read, reflect and study
- E. Students and teacher sensitive to one another
- F. Tolerance for others' ideas
- G. Students actively involved
- H. Teacher provides structure/design and asks questions and responds

- I. Encouragement to come up with solutions to problems
- J. Freedom to express a variety of knowledge
- K. Time for interaction to problem and group discussion

III. Lesson Plan Core

- A. Immediate purpose of lesson
  Following an initial study of their own community in terms of location, climate, geography, work, history, rules, celebrations, and special features, the children will be encouraged to speculate upon the nature of communities outside their own. Their observations of similarities and differences will be elicited as a motivational impetus for further copmparative studies. To prepare children for written communication with other children from a distant and in many respects dissimilar community. The class will share present knowledge as well as questions about different communities.
- B. Student background knowledge (prior knowledge and skills)
  1. Assigned pen pals
  2. Letter writing skills
  3. Ability to make inferences
- C. Student activities
  Students will:
  1. Read books to determine descriptive factors about various types of communities
  2. View filmstrips and movies in order to aid in classifying community types
  3. Differentiate between various types of communities based on inferences made by observation and information according to vocabulary terms: rural, urban, suburban, etc. For example:
     - a. If an urban community is a place where many people live and work closely together, which pictures are showing such a place?
     - b. Why did you decide that this picture is showing a rural community?
  4. Collect and sort community pictures according to type.
  5. Be encouraged to conclude that certain characteristics constitute needs and can be found in all types of communities in various forms.

6. Develop a chart listing important features of communities in general and Redding in particular. For example:

General or Common Features	Redding
Homes	Single Family
Climate	Temperate
Work	Professional
Fun	Tennis, Hiking

7. Observe and deduce that people have different ways of meeting their common needs and the result is variety from one community to another.
8. Expand and predict factors that might cause variety from one community to another by posing "What if ..." questions For example:
   a. What if Redding's climate were tropical?
   b. What if a movie theater came to Redding?
   c. What if DisneyWorld opened in Redding?

D. Instructional materials

Students will be provided with:

1. Books depicting and describing various types of communities
2. Filmstrips and movies illustrating community life in different settings

E. Instructional techniques

1. Brainstorming
2. Lecture
3. Non-print media viewing
4. Reading research

F. Lesson sequence

1. Introduce lesson through media
2. Discuss community types
3. Brainstorm and classify community types
4. Collect pictures and sort them into community types
5. Develop a chart comaring features of a community and those of Redding
6. Expand on ideas, and predict ideas about chosen Florida community

G. Metacognition
   1. What similarities and differences did you find?
   2. Encourage children to build on one another's thoughts
   3. Answering questions about what made them think about an answer given. What clues did they use?

IV. Transfer

A. Application of these thinking skills
Charting design and sorting skills can be applied in numerous curriculum areas. See also "Gubbins' List of Thinking Skills" on the next page.

B. Follow up activities
Students will
   1. Predict on the basis of textbook information the nature of the community in which their pen pals live. Later the children will evaluate their predictions in light of an expanded pool of information.
   2. Correspond with their Florida pen pals. Using their knowledge about communities, they will formulate substantive questions about the community of their pals.
   3. Share with classmates and pen pals their feelings about the similarities and differences between the two communities. Their thoughts will be elicited by means of a written or oral exercise revealing their reflection. For example:
      a. If I could change one thing about my community . . .
      b. If I could improve my community . . .
      c. The best . . . , (or the worst . . .) about my community
   4. Incorporate information about the new community onto an existing chart so that graphic comparisons can be made.

Gubbins' List of Thinking Skills

I. Problem Solving

- A. Identifying the general problem
- B. Clarifying the problem
- C. Formulating hypotheses
- D. Formulating appropriate questions
- E. Generating related ideas
- F. Formulating alternative solutions
- G. Choosing the best solution
- H. Applying the solution
- I. Monitoring the acceptance of the solution
- J. Drawing conclusions

II. Decision Making

- A. Stating desired goal/condition
- B. Stating obstacles to the goal/condition
- C. Identifying the alternatives
- D. Examining the alternatives
- E. Ranking the alternatives
- F. Choosing the best alternative
- G. Evaluating actions

III. Inferences

- A. Inductive thinking skills
  1. Determining cause and effect
  2. Analyzing open-ended problems
  3. Reasoning by analogy
  4. Making inferences
  5. Determining relevant information
  6. Recognizing relationships
  7. Using insight
- B. Deductive thinking skills
  1. Using logic
  2. Spotting contradictory statements
  3. Analyzing syllogisms
  4. Understanding and applying spatial relationships

IV. Divergent Thinking Skills

- A. Listing attributes of objects/situation
- B. Generating multiple ideas (fluency)
- C. Generating different ideas from multiple viewpoints (flexibility)
- D. Generating unique ideas (originality)
- E. Generating detailed ideas (elaboration)
- F. Synthesizing information

V. Reasoning Skills

- A. Distinguishing between facts and opinions
- B. Judging credibility of a source
- C. Observing and judging observation reports
- D. Identifying central issues or main idea
- E. Recognizing underlying assumptions
- F. Detecting bias, stereotypes, cliches
- G. Recognizing loaded language
- H. Evaluating hypotheses
- I. Classifying data
- J. Predicting consequences
- K. Determining an organizational pattern
- L. Planning alternative strategies
- M. Recognizing inconsistencies in information
- N. Identifying stated and unstated reasons
- O. Comparing similarities and differences
- P. Evaluating arguments
- Q. Using dialogical approaches
- R. Recognizing different points of view
- S. Projecting trends, patterns, or outcomes from data (forecasting)
- T. Developing and applying observation skills
- U. Defining and clarifying terms
- V. Generating ideas to support different points of view on the same issue
- W. Using metacognition

E. Jean Gubbins, Ph.D.
Connecticut State Department of Education
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This list is based on a compilation and distillation of ideas from Bloom, Bransford, Bruner, Carpenter, Dewey, Ennis, Feuerstein, Jones, Kurfman, Kurfman and Solomon, Lipman, Orlandi, Parnes, Paul, Perkins, Renzulli, Sternberg, Suchman, Taba, Torrance, Upton, the Ross Test, the Whimbey Analytical Skills Test, the Cornell Critical Thinking Test, the Cognitive Abilities Test, the Watson-Glaser Critical Thinking Appraisal, the New Jersey Test of Reasoning Skills, and the SEA Test.

Lesson Plan for Grade Two

Commonalities Among Communities: Food, Clothing and Shelter

Brenda Ashmore
Classroom Teacher
Redding Elementary
Redding

I. Objective

- A. Behavioral objective
  Students will be able to recognize and name factors common to all communities, namely, food, clothing and shelter, as basic human needs.
- B. Thinking skills
  1. Recalling information about their own community
  2. Identifying relationships and patterns
  3. Identifying attributes and components
  4. Comparing and contrasting
  5. Grouping and classifying
  6. Summarizing and integrating
  7. Probabilistic reasoning
  8. Inferring

II. Disposition/Attitudes

- A. Non-judgmental atmosphere nurturing -
  1. open-mindedness
  2. brainstorming
  3. risk-taking
  4. discussion activity
  5. interaction
  6. communication
- B. Non-threatening atmosphere for individual work
- C. Students will be encouraged to ask questions
- D. Time to read, reflect and study
- E. Students and teacher sensitive to one another
- F. Tolerance for others' ideas
- G. Students actively involved
- H. Teacher provides structure/design and asks questions and responds
- I. Encouragement to come up with solutions to problems
- J. Freedom to express a variety of knowledge
- K. Time for interaction to problem and group discussion

III. Lesson Plan Core

- A. Immediate purpose of lesson
- B. Student background knowledge (prior knowledge and skills)
- C. Student activities
- D. Instructional materials
- E. Instructional techniques
- F. Lesson sequence
  - 1. Students will review books, filmstrips and movies to obtain information and impressions about different communities.
  - 2. In groups of two, the students will list specific items which they determine to be "needs" as differentiated from those which they conclude to be "wants".
  - 3. In the large group, the lists will be shared and integrated onto a large chart enabling the students to observe that there are some generally recognized "needs" and "wants", but in specifics some items might be included on one list or the other based on considerations such as culture, environment, etc.
- G. Metacognition
  - 1. Students will offer their rationale for their decisions to place items on one list or the other.
  - 2. Students will speculate on what factors might influence a person's inclusion of certain factors on such lists; i.e., culture, environment, age, etc.

IV. Transfer

- A. Application of these thinking skills
- B. Follow up activities

Lesson Plan for Grade Two

Commonalities Among Communities:
Recreation and Entertainment

Brenda Ashmore
Classroom Teacher
Redding Elementary
Redding

I. Objective

A. Behavioral objective
   1. To have students examine and list the opportunities for recreation and entertainment that exist in Redding.
   2. To discuss their assessments of the proposal that all listed entertainment - recreation options be made available within Redding.

B. Thinking skills
   1. Recalling information about their own community
   2. Identifying relationships and patterns
   3. Identifying attributes and components
   4. Comparing and contrasting
   5. Grouping and classifying
   6. Summarizing and integrating
   7. Probabilistic reasoning
   8. Inferring

II. Disposition/Attitudes

A. Non-judgmental atmosphere nurturing -
   1. open-mindedness
   2. brainstorming
   3. risk-taking
   4. discussion activity
   5. interaction
   6. communication

B. Non-threatening atmosphere for individual work

C. Students will be encouraged to ask questions

D. Time to read, reflect and study

E. Students and teacher sensitive to one another

F. Tolerance for others' ideas

G. Students actively involved

H. Teacher provides structure/design and asks questions and responds

- I. Encouragement to come up with solutions to problems
- J. Freedom to express a variety of knowledge
- K. Time for interaction to problem and group discussion

III. Lesson Plan Core

- A. Immediate purpose of lesson
- B. Student background knowledge (prior knowledge and skills)
- C. Student activities
- D. Instructional materials
- E. Instructional techniques
- F. Lesson sequence
    1. Children are presented with a list of recreation/entertainment options from which they determine those choices available to people within the borders of their community.
    2. Large group discussion of the consequences of having all options listed available within Redding. Students will be encouraged to predict the consequences of such a thing and their feelings about it.
- G. Metacognition
    1. Students will be asked to consider why their feelings were what they were.
    2. If the same proposal were made in New York City, or even in Danbury, do they think those students would respond differently? Why? Why not?

IV. Transfer

- A. Application of these thinking skills
- B. Follow up activities

Lesson Plan for Grade Eleven

Translating Vergil's _Aeneid_

Robert Barako
Classroom Teacher
Roger Ludlow High School
Fairfield

I. Objective

- A. Behavioral objective
    - 1. Translate the opening twelve lines of the Aeneid
    - 2. Identify the main idea
- B. Thinking skills
    - 1. Critical thinking
        - a. Knowledge: remembering vocabulary and meaning of word endings
        - b. Comprehension: move from an absolutely literal translation to a more meaningful one
        - c. Divergent thinking: generating several possible grammatical translations from one word ending
        - d. Problem solving: arriving at an English translation from Latin word order
        - e. Inductive thinking
            - 1) recognizing relationships through use of word endings
            - 2) making inferences from connotative language of Vergil
        - f. Evaluative thinking skills
            - 1) Identifying central theme
            - 2) Evaluating legitimacy of theme

II. Disposition/Attitudes

- A. Supportive
- B. Challenging

III. Lesson Plan Core

- A. Immediate purpose of lesson
  Students will demonstrate the ability to translate the opening lines of the _Aeneid_

- B. Student background knowledge (prior knowledge and skills)
  Students will be able to use the first and second year courses
- C. Student activities
  1. Translating alone at seat
  2. Translating in pairs
  3. Translating with teacher
- D. Instructional materials
  1. Text of Aeneid with footnotes
  2. Dictionary
  3. Grammar
- E. Instructional techniques
  1. Prelecting (pointing out difficulties of lines)
  2. Individual conferencing
- F. Lesson sequence
  1. Students translating
  2. Teacher-led discussion of grammar, main idea, thinking skills
- G. Metacognition
  Students will be aware of decisions made in translating and the bases on which these decisions are made.

IV. Transfer

- A. Problem solving of Latin word order to increase comprehension of jumbled word order of some poetry and of more complex sentences.
- B. Continue translating in Aeneid and identifying through labeling the thinking skills used in translating.

Lesson Plan for Grade Five

Analyzing Sand

Miram R. Buckland
K. T. Murphy School
Stamford School District

I. Objectives

- A. Behavioral objective
  The students will demonstrate that sand is composed of many different kinds of particles by separating it into its component parts.
- B. Thinking skills
  1. Analysis
  2. Fluency
  3. Categorizing
  4. Inference

II. Disposition/Attitudes

- A. Non-judgmental brainstorming
- B. Risk-taking in the presentation of ideas
- C. Time for discovery and answering

III. Lesson Plan Core

- A. Immediate purpose of lesson
  To have the students understand that sand is formed from the materials that are in the area, primarily the rocks and shells.
- B. Student background knowledge (prior knowledge and skills)
  Some knowledge of rocks
- C. Student activities
  The students will:
  1. Collect sand
  2. Study it under a magnifying glass
  3. Analyze it
  4. Categorize it
  5. Brainstorm to infer its source
  6. Do creative writing
- D. Instructional materials
  1. Magnifying glasses
  2. Small sheets of stiff, white paper

E. Instructional techniques
  1. Brainstorming
  2. Individual conferencing
  3. Peer grouping
  4. Creative writing
  5. Categorizing
  6. Discussion

F. Lesson sequence

The class will take place at Cove Island Beach

Teacher: "Look around. What would you say the are the characteristics of sand?"

The children will brainstorm.

Teacher: "Let's use magnifying glasses to get a closer look."

The children work in groups of two or three. They take a small quantity of sand and examine it. The teacher walks among the groups, discussing their progress.

Teacher: "What did you find?"

Time for reporting.

Teacher: "What characteristic could you use to divide the sand particles into different categories?"

Have the children divide their sand into the categories they come up with.

Teacher: "How many sets do you have?"

"Are some sets larger than others"

"Is there anything else on the beach that is similar?"

"How do you suppose the sand was formed?"

"Do you suppose every beach, everywhere, has the same kind of sand?"

"Why might there be differences?

All the questions are followed by discussion.

Teacher: "I want you to imagine that you are a tiny particle in the center of a rock. You are surrounded by particles that are just like you. All day and night you are being tossed around by the wind or waves. Finally, one day, you are broken off and you are no longer part of something bigger. You look around, and you are surrounded by pieces that are different shapes and different colors."

"How do you suppose you would feel?"

"I want you to write a story about it."

G. Metacognition
   1. How did we find out that sand is made up of many different kinds of particles?
   2. Discussion

IV. Transfer

A. Application of these thinking skills
   1. In another science lesson, we will discuss how we could find out what characteristics rocks have.
   2. In social studies, we will analyze the differences between the North and South that caused the Civil War.

B. Follow up activities
We will analyze sands obtained from different areas.

Lesson Plan for Grade Eight

Using Readers' Guide to Periodical Literature

Mary Ann Carroll
Classroom Teacher
Stratford

I. Objective

- A. Behavioral objective
  1. When given a sample entry from the Readers' Guide, students will correctly identify entry information.
  2. From a prepared list of topics, students will select a topic and locate three articles on that subject.
  3. After reading each of the three articles, students will rank them in order of importance to their topic and explain why one is more valuable than the other.
- B. Thinking skills
  Critical thinking skills focused on:
  1. Information recall [identify and locate]
  2. Application [use of Readers' Guide]
  3. Analysis [compare three entries]
  4. Evaluation [rank order of importance and give reason for ranking]

II. Disposition/Attitudes

- A. Non-judgmental discussion activity -encourages risk-taking in presenting ideas
- B. Non-threatening atmosphere for individual work in the library
- C. Freedom to select topic of interest for research
- D. Time to read and study three magazine articles before ranking them in importance

III. Lesson Plan Core

- A. Immediate purpose of lesson
  1. Students will be able to identify, locate and use the Readers' Guide to Periodical Literature to find articles about a chosen topic.

2. From a prepared list of topics, students will select a topic and then locate three articles on that subject.
3. After reading each article, students will rank them in order of value for their research report and explain why one is more valuable than the others.

B. Student background knowledge (prior knowledge and skills)
   1. Identification of main idea, and the ability to compare and contrast
   2. Ability to analyze and evaluate, listen and discuss, and identify, locate, and use materials appropriately.

C. Student activities

The students will:
   1. Listen to teachers' explanation
   2. Discuss "periodicals", "index/indices", and use
   3. Tell what kind of information can be found
   4. Read explanation of abbreviation
   5. Identify entry information from chart
   6. Watch filmstrip to review
   7. Use H. W. Wilson's How to Use the Readers' Guide to Periodical Literature
   8. Select a topic
   9. Look up topics in Readers' Guide
   10. Fill out form to get magazines
   11. Read three magazine articles on their topic
   12. Rank articles in order of importance or value to their topic report and give reasons for ranking

D. Instructional materials
   1. H. W. Wilson's bookles
   2. McGraw-Hill's filmstrip, "How to Use the Readers' Guide to Periodical Literature"
   3. Perfection Form's wall chart on "How to Use the Readers' Guide to Periodical Literature"
   4. Weekly and monthly samples of magazines
   5. Monthly and yearly editions of the Readers' Guide
   6. National Geographic and American Heritage indices

E. Instructional techniques
   1. Group lecture
   2. Group discussion
   3. Group filmstrip viewing
   4. Individual assistance

F. Lesson sequence
   1. First Day: Introduction
      a. Ask students where they can find the latest information on current events.
      b. Show students samples of weekly and monthly magazines.
      c. Define the term "periodical" as it relates to magazines.
      d. Question students for what kinds of information periodicals are good sources.
      e. Using weekly magazine samples, show why it's easier to use the Readers' Guide than go through fifty-two issues.
      f. Try to have students define "index" and give examples of various indices
         1) The Index Volume
            a) Show students yearly and monthly volumes and their location.
            b) Give each student a volume.
            c) Explain how the volume is arranged: list of magazines, covered, abbreviations, symbols, etc.
            d) Explain and show examples of author, title, and subject entries, and the importance of "key" words.
            e) Demonstrate how to read an entry explaining sub-headings, cross-references, criticisms, and book reviews.
         2) How to locate a periodical
            a) List of periodicals to which our library subscribes
            b) Procedures for obtaining and borrowing periodicals
   2. Second Day: Review
      a. Show filmstrip "How to use the Readers' Guide to Periodical Literature". Ask class if they have any questions.

        b. Have class do "Readers' Guide Quiz," H. W. Wilson's "How to Use the Readers' Guide to Periodical Literature, on their own, and then go over questions orally with enire class.
        c. Students will be given a prepared list of topics. They will be prepared to select a topic by the next day.
    3. Third Day
        a. Student will select a topic from the list of topics.
        b. Student will locate three articles on that subject from the Readers' Guide
        c. After reading each article, students will rank them in order of importance for their research, and explain why one is more valuable than the others.

G. Metacognition

Brainstorm with students before they before begin their reports to help them distinguish facts from opinions in sources, to judge the credibility of their source, as well as the authority and bias of authors and their points of view.

IV. Transfer

A. Application of these thinking skills

The thinking skills involved in this lesson can be applied in all subject areas, and the use of the Readers' Guide can also be applied to all subject areas, as well as for the students own personal use now and later in life.

B. To reinforce this lesson, the students' other subject teachers will be encouraged to bring these students to the library so they can have follow-up activities to show the usefulness of these skills in other subject areas.

Lesson Plan

for Grade Eight

Reading: American Historical Letters

Carol Denehy
Classroom Teacher
Memorial Boulevard School
Bristol

Memorial Boulevard School

Reading Mrs. Denehy

> The tongue is prone to lose the way,
> Not so the pen, for in a letter
> We have not better things to say,
> But surely say them better.
> Ralph Waldo Emerson

Introduction

One process of learning may be described as a chain that grows link by link. For this assignment, the book Letters in American History (New York: Harmony Books, 1982; Ref./973/Letters), edited by H. Jack Lang, will be the initial link. The student shall read through the contents of that book to choose one letter that particularly piques his or her interest. The student shall then pursue that interest by researching the life of either the sender or receiver of the selected letter, the next link. After compiling the appropriate biographical information, the student shall focus on one specific aspect of the subject's personal or professional life as part of Writing Assignment One.

In this first writing assignment, the student shall draft a letter as if it had been written by the subject of the selected biographical research. The student shall be true to history and to the personality of the selected writer. The topic of the letter shall be a response to, or an elaboration on, the original letter, or a topic related to the selected American's personal or professional life.

The final link shall be Writing Assignment Two: an expository paper that explores some contrasts of the selected American, following the topic sentence: "He/she was the best of men/women; he/she was the worst of men/women." At this point, the student can then call upon the wider body of information he or she has compiled to show that historical figure, not as a cardboard figure or idol, but as a human being with both strengths and weaknesses.

Procedures

I. Using the M.B.S. library media center:

  A. Read through Letters in American History, kept on reserve.

  B. Choose one letter that particularly interests you: you should ask for a photocopy of the letter you have selected.

C. Research the life of the letter writer or the receiver, using the following reference resources in the library media center, as appropriate. (Note: these resources overlap in coverage, and provide varying amounts of information; check each, in the order listed.)

Who Was Who in America (5 vol.: 1607 through 1968) [R/920.03/Wh]

Webster's Biographical Dictionary [R/920/We]

Webster's New Biographical Dictionary [Ref./920.02/Webster's]

Webster's American Biographies [Ref./920.073/Webster's]

Dictionary of American Biography (11 vol.) [R/920.03/Di]

additionally, check general encyclopedias, particularly The Encycopedia Americana, 1984 ed.

D. Keep 3" x 5" note cards for each source, with complete bibliographic information, i.e., author or editor, title, place of publication, publisher, and copyright date.

E. Glean information on the selected subject's life that includes basic facts on his or her personal and professional life.

F. Choose one area of the subject's life to concentrate upon, and develop more detailed notes.

II. Writing Assignment One

A. The original letter selected from Letters in American History shall be used as a model to draft your own letter, as if from either the sender or receiver of the original letter.

B. The supposed letter writer shall be the subject of your biographical research.

C. The topic of the letter shall be a response to, or an elaboration on, the original letter, or a topic topic that is related to the selected American's personal or professional life.

D. The style of the letter shall be an imitation of the tone, use of vocabulary, and attitudes of the selected American, to create an impression that the letter truly might have been written by that person.

E. All factual information should be true to the history of the time period of the supposed writing of the letter.

F. All opinions expressed should be reflective of the actual beliefs of the selected American.

III. Writing Assignment Two

A. This expository paper shall be a critical delineation of the contrasts within the subject's life.

B. The topic sentence shall be the following: "He/she was the best of men/women; he/she was the worst of men/women."

C. This paper shall present both the strengths and weakneses of the selected subject's personality and character.

D. This paper shall present what actions or events resulted from the selected subject's abilities as well as flaws.

E. This paper shall present information about how the selected subject affected American history.

CDD:MDL/3-87

Lesson Plan for Grade Twelve

Chaucer's England

One topic in an entire class search project for
senior British Literature

Valerie Foerster
Classroom Teacher
Ridgefield High School

I. Objective

- A. Behavioral objective
  The students will:
  - 1. Work effectively in small groups
  - 2. Use research materials to gather information on the literary and social history of medieval England
  - 3. Create annotated bibliographies
  - 4. Present information orally to class
- B. Thinking skills
  - 1. Working in small groups
    - a. Problem solving
    - b. Decision making
    - c. Divergent thinking skills
      - 1) Listing attributes of objects situation
      - 2) Generating multiple ideas (fluency)
      - 3) Generating different ideas from multiple viewpoints (flexibility)
    - d. Reasoning skills
      - 1) Determining an organizational pattern
  - 2. Using research materials
    - a. Divergent thinking skills
      - 1) Synthesizing information
    - b. Reasoning skills
      - 1) Distinguishing between facts and opinions
      - 2) Judging credibility of a source
      - 3) Observing and judging observation reports
      - 4) Identifying central issues or main idea
      - 5) Recognizing underlying assumptions
      - 6) Recognizing loaded language
      - 7) Classifying data

        8) Recognizing inconsistencies in information
        9) Comparing similarities and differences
        10) Evaluating arguments
        11) Defining and clarifying terms
        12) Generating ideas to support different points of view on the same issue

3. Creating bibliographies
    a. Divergent thinking skills
        1) Synthesizing information
    b. Reasoning skills
        1) Distinguishing between facts and opinions
        2) Judging credibility of a source
        3) Identifying central issues or main idea
        4) Classifying data
        5) Determining an organizational pattern
        6) Recognizing inconsistencies in information
        7) Comparing similarities and differences
        8) Developing and applying observation skills
        9) Defining and clarifying terms
4. Presenting information
    a. Problem solving
        1) Identifying the general problem
        2) Clarifying the problem
        3) Formulating appropriate questions
    b. Divergent thinking skills
        1) Listing attributes of objects/situation
        2) Generating multiple ideas (fluency)
        3) Generating different ideas from multiple viewpoints (flexibility)
        4) Generating unique ideas (originality)
        5) Generating detailed ideas (elaboration)
        6) Synthesizing information

c. Reasoning skills
  1) Identifying central issues or main idea
  2) Determining an organizational pattern
  3) Comparing similarities and differences
  4) Recognizing different points of view
  5) Defining and clarifying terms

II. Disposition/Attitudes

In order for students to work effectively in groups and feel comfortable about presenting information to peers in a formal setting, the classroom must be a place where open-mindedness and risk taking are nurtured. Students and teacher must be sensitive to each other and there must be a tolerance for others' ideas.

III. Lesson Plan Core

A. Immediate purpose of lesson
Students will:
  1. Have an understanding of the literary and social history of medieval England
  2. Be able to convey knowledge to peers in an organized manner
  3. Work effectively in small groups

B. Student background knowledge (prior knowledge and skills)
Students will have the ability to:
  1. Brainstorm topics
  2. Use media resources
  3. Take notes
  4. Prepare bibliographies

C. Student activities
Student activities will include:
  1. Brainstorming possible topics of investigation
  2. Making group decisions about topics to study
  3. Dividing work to be done within group
  4. Monitoring group members continuously
  5. Using print and nonprint media as research tools
  6. Creating bibliographies
  7. Organizing information
  8. Presenting information to rest of class

D. Instructional materials

Students will use a variety of materials, among which are the following:

1. Filmstrips
2. Textbooks
3. Biographies
4. Literary handbooks
5. Literary histories
6. Literary criticisms
7. Theatre histories
8. English histories
9. Literary atlases
10. Geographical material
11. Social histories
12. Periodicals
13. Primary sources

E. Instructional techniques

Various modes of instruction will take place during the unit. They include:

1. Small group work and brainstorming
2. Lecture by library media teachers
3. Individual and group conferencing with classroom teacher
4. Group instruction of whole class

F. Lesson sequence

1. Teacher presents topic
2. Students choose area and group
3. Group brainstorms possible topics for research
4. Library media teachers demonstrate use of resources available
5. Students work in library
6. Students create annotated bibliography
7. Group organizes information for panel
8. Panel presentation
9. Evaluation of group by class based on criteria already established by entire group

G. Metacognition

While research is taking place and after the presentation, classtime will be allocated to discussing the following questions:

1. What problems did I/we have to solve involving content?
2. What problems did I/we have to solve involving group dynamics?
3. How could I have been an even more effective member of the group?
4. What did I learn from this project?

Further questions will be gathered from the student concerning the evaluation of the group presentations

IV. Transfer
  A. Application of thinking skills
     The skills of group dynamics and research either introduced or "polished" during this unit have a wide application. Both types of skills are necessary in educational, work, and life settings
  B. Follow up activities
     To ensure that students present adequate information and present it clearly, remind them that part of the mid-year exam will cover the material researched by the students

Lesson Plan for Grade Three

Communities Throughout the World

Heather Giancola
Classroom Teacher
Springdale School
Stamford Public Schools

I. Objective

- A. Behavioral objective
  The students will develop a definition for the concept of "communities" to be used in their studies of communities throughout the world.
- B. Thinking skills
  1. Problem solving - recall
     generate ideas through brainstorming, identify and define those items that make up a community
  2. Comprehension
     Classify (through brainstorming) the ideas generated into workable sections; i.e., recreation, homme, business, church
  3. Application
     using magazine pictures to make a collage of the categories
  4. Analysis
     of collages - looking at the parts to see if they fit
  5. Synthesis
     use the gathered information to write a definition of "community"
  6. Evaluation
     predict whether we will be be able to apply this definition to any community; verify predictions on information learned

II. Disposition/Attitudes

- A. Non-judgmental brainstorming activities - encourage risk taking in presenting ideas
- B. Encouraged to come up with new solutions to problems
- C. Non-threatening atmosphere

III. Lesson Plan Core

- A. Immediate purpose of lesson
  To develop a definition of the word "community"; the definition will be used as a criterion or point of comparison throughout

the year as we study various types of communities found throughout the world.

B. Student background knowledge (prior knowledge and skills)

The students will already be able to use brainstorming techniques and be able to draw upon their past experiences with people in communities and community workers; their knowledge of where they live as well as the area around the school.

C. Student activities

Students will generate a definition to be verified as information is uncovered. They will brainstorm what they see in their community and list and list the different thing on the board. They will categorize them and give each group a label; i.e., business, places of worship, recreation, homes.

D. Instructional materials

Magazines can be cut up to locate pictures for collages to support and show the different categories they develop on a large map of Stamford.

E. Instructional techniques

The techniques of brainstorming, large group discussion, and small group synthesizing by making collages.

F. Lesson sequence

1. Introduce the lesson by asking the children to locate where they live on the map of Stamford and mark that place with a colored push-pin; then locate the school.
2. Initiate a discussion about the children's different neighborhoods; what's in them.
3. Introduce the word "community" and explain that the class will be learning about many communities this year. We will need to have one defginition by which we can decide if a place is a community or not.
4. Go on with the discussion of what's in their neighborhoods. Have the students generate their own definitions of what they think a community is. They should keep these definitions for later use.
5. Then brainstorm and list ideas on the blackboard, or on newsprint. (Post-it notes can also be used.) All students will be encouraged to participate; accept all ideas. If there are any questionable ideas, ask the children for evidence supporting the inclusion of them on the list.

6. Look at the final list and try to group places by similarities.
7. Divide the students into groups according to the number of categories they have generated
8. Have the children cut out pictures from magazines to illustrate their area on a bulletin board display.
9. The students will look at and rewrite their own definitions. Then they will determine and write a class definition for the word "community". Put this definition on a poster and leave it up for the year.

G. Metacognition
After defining "community", the students will be encouraged through discussion to determine how they were able to create their definition by asking the following questions:

1. What did we do?
2. Was there any order or sequence?
3. What could we do differently?
4. Were they any steps left out?
5. Does anything need to be expanded?

IV. Transfer

A. Application of these thinking skills

1. Ask the children to predict other ways their definition would be applicable to all communities.
2. The techniques of brainstorming, categorizing, identifying and defining can be used in any subject area to help in problem solving
   a. Science - what are insects?
   b. English - identify a noun
   c. Math - story problems, inquiry puzzles
3. Comparing, drawing conclusions, and synthesizing would naturally follow the above skills in coming to a closure on any task.

B. Follow up activities
Ask the children to look at textbook definitions of "community" in order to make comparisons.

Lesson Plan for Grade Three

Class Meeting

Heather Giancola
Classroom Teacher
Springdale School
Stamford Public Schools

I. Objective

A. Behavioral objective
The children will develop self-discipline, responsibility and positive attitudes. They will develop mutual respect. They will begin to think through logical consequences before trying to solve problems.

B. Thinking skills
1. Problem solving (identify, clarify)
2. Recall - remember what occurred
3. Restate - use own words
4. Brainstorm
5. Analysis

II. Disposition/Attitudes

A. Non-judgmental brainstorming activities - encourage risk taking in presenting ideas

B. Encouragement to come up with new solutions to problems

C. Non-threatening atmosphere

III. Lesson Plan Core

A. Immediate purpose of lesson
1. To introduce students to the concept of "class meeting" to be used as a problem solving tool for the class.
2. To help children identify problems - repetitive behavior and why it persists - writing problems on agenda sheet
3. To have students take some responsibility for behavior and to learn the impact of mutual respect by brainstorming and analyzing situations brought up for discussion

B. Student background knowledge (prior knowledge and skills)
Ability to identify and link cause with effect

C. Student activities
  1. Sitting in a class group circle
  2. Complimenting one another
  3. Discussing behavioral problems
  4. Identifying solutions to those problems
  5. Closing the meeting with complimentary statements

D. Instructional materials
  1. Elementary version of Robert's Rules of Order
  2. An agenda sheet

E. Instructional techniques
Students are actively involved in identifying problems to be discussed and understood.

F. Lesson sequence
  1. Call the first meeting. Have the class sit in a circle. Compliment the class, individual students for getting in the circle.
  2. Explain the purpose and discuss how meetings are run and why each will begin and end with compliments.
  3. Begin by discussing an overall plan such as "talking when going from one subject to another."
  4. Brainstorm - discuss how the problem was handled in the past, how they think it should be handled, and what can be done about it.
  5. Zero in on one solution and vote on what behavior will be mutually acceptable.

G. Metacognition
Before ending group discussion with compliments explore the methods used to reach a solution.

IV. Transfer

A. Application of these thinking skills
  1. Promote methods of solving problems
  2. Establish self-discipline
  3. Promote mutual respect
  4. Establish a positive

B. Follow up activities
Hold bi-weekly class meetings
Promote ability to look at areas of curriculum using methods of identifying problems by which the students can continue to practice class meeting skills.

Lesson Plan for Grades Four and Five

Reference Research Skils: American Indians

Marion Gilbert
Library Media Teacher
Boyle School
Darien

I. Objective

- A. Behavioral objective
  Given a specific topic related to American Indians (Homes, Clothing, Food, Family Life, Government, etc.) students will select/ determine relevant information and take notes on this information.
- B. Thinking skills
  Emphasis on:
  1. Analysis
  2. Synthesis
  3. Evaluation
  4. Categorizing
  5. Comparing and contrasting
  6. Determining relevant information
  7. Inference
  8. Formulation of appropriate questions with feedback
  9. Peer-conferencing
  10. Discussion in small groups

II. Disposition/Attitudes

- A. Teacher provides:
  1. Structure
  2. Designs and asks questions
  3. Responds
- B. Students:
  1. Discuss
  2. Conference
- C. Encourage:
  1. Open-mindedness
  2. Risk-taking
  3. Interaction
  4. Communication

III. Lesson Plan Core

A. Immediate purpose of lesson
  1. In analyzing facts about American Indian life (Homes, Food, Clothing, Government, Transportation, Crafts), students will discover diversity among Indian cultures; (i.e., an "Indian" is not an "Indian".) when they compare and contrast their topics as they relate to:
    a. Eastern Woodland Indians
    b. Southeastern Indians
    c. Plains Indians
    d. South West Indians
    e. West Coast Indians.
  2. They will also recognize basic and social needs common to all.

B. Student background knowledge (prior knowledge and skills)
  1. Library:
    a. Location of reference/non-fiction
    b. Use of the card catalog
      1) Going from specific to general
        a) NAVAJO   INDIANS
        b) INDIANS OF N.A.—NAVAJO
      2) Color-banded AV cards
      3) Spelling
        a) NAVAJO   NAVAHO
    c. Using indices
      1) Terminology
        a) Homes/Houses/Dwellings Habitat
        b) SEE & SEE ALSO
      2) Going from headings to sub-headings
    d. Note-taking
    e. Outlining
  2. Critical thinking:
    a. Brainstorming
    b. Discussing
    c. Listening
    d. Peer conferencing
  3. Social studies
    a. What tribes lived where

C. Student activities
  1. Prior to lesson teacher (or Library Media Teacher) will group students at tables of four to five by topic (Homes, Clothing, etc.). Within each group one student will be identified to research Woodland Indian Homes, one for Plains Indian homes, etc, - each region represented in small group.

2. Students will then:
    a. Select relevant material
    b. Take notes using key words and phrases
    c. Discuss findings in small groups
    d. Determine criteria for deciding what information is key
    e. Peer conference on adequacy of information retrieved
    f. Decide what additional information is needed
    g. Retrieve additional information

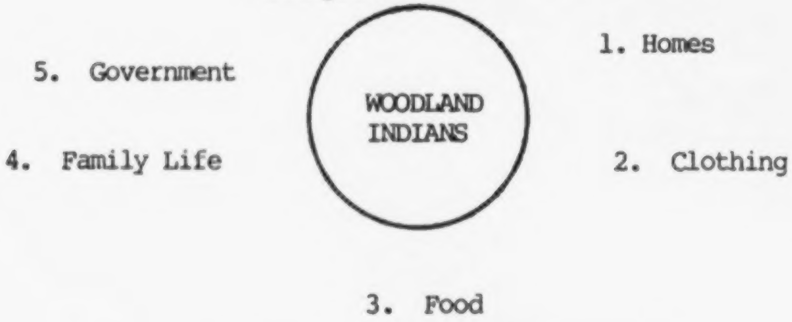
D. Instructional materials
1. Filmstrips
2. Cassettes
3. Vertical file
4. Study prints
5. Pamphlets
6. Encyclopedias
7. Non-fiction books
8. Prepared outlines
9. Overhead transparencies

All used to review research strategy and skills

E. Instructional techniques
1. Modeling
    a. How to:
        1) Find information
        2) Use indices
        3) Recognize relevant information
2. Motivation
    a. Analogy:
        1) Encyclopedia as view from Empire State Building
        2) Non-fiction as view from streets of Chinatown
3. Individual and group conferencing
4. Facilitation of group discussion

F. Lesson sequence
1. Classroom or Library
    a. Introduction to unit on Indians (film/video tape/etc.) plus map showing where different Indian cultures lived
    b. Brainstorming questions to ask about Indians - leading to topics (Homes, Clothing, etc.)
    c. Students assigned to select:
        1) Group
        2) Topic
        3) Individual (tribe) identity

2. At Library
   a. Locate/select/note take on topic
   b. Groups discuss/compare/contrast information and come up with specific questions. For example:
      1) Were homes permanent or temporary?
      2) Who built?
      3) How furnished?
      4) Do all tribes in region build similar houses?
   c. Peer conferencing on notes
   d. Reorganization of students by region of tribes they researched, for example:



   e. Presentation to class
   f. Product
      1) Creation of data bank
      2) Story written by Indian boy or girl discribing life
      3) Creation of list of words that symbolize each region/tribe
      4) Create riddle by designing clues about life of Indians in this region - rest of students guess the region or tribe
      5) Create analogies

$\frac{\text{Cheyenne}}{\text{tepee}}$ as $\frac{\text{Iroquois}}{?}$

$\frac{\text{Tepee}}{\text{buffalo hide}}$ as $\frac{\text{wigwam}}{?}$

G. Metacognition
   1. Have students learn from errors so they can identify ineffective strategies and thinking patterns
      a. Students develop organized plan as to how they will approach problem.

    2. Promote generation of and selection among multiple methods of presenting information.
  - H. Evaluation
    1. Topic adequately covered?
    2. Used variety of resources?
    3. Note cards contain relevant information?
    4. Communication of topic to others effective?
    5. Key words and phrases only?

IV. Transfer

  - A. Application of these thinking skills
  - B. Follow up activities

Lesson Plan for Grade Eleven

Immigration and Social Stratification
Culminating Activity

Susan Joy
Classroom Teacher
Danbury

Scope: The high school American history project (for learning disabled students) which is described within is intended for implementation in the third quarter as a culminating project on immigration and social stratification. The planned duration of the project is two weeks. The planned outcome of the project is understanding of the factors contributing to the social stratification in America.

I. Objective

A. Behavioral objective
Students will determine factors shaping an ethnic group's access to wealth, social prestige and power

B. Thinking skills
1. Application
2. Analysis
3. Synthesis
4. Evaluation

II. Disposition/Attitudes

A climate of mutual respect and appreciation between students and teacher that fosters sharing of ideas, risk taking and total participation of students.

III. Lesson Plan Core

A. Immediate purpose of lesson
To provide a summation of the study of American immigration and social stratification

B. Student background knowledge (prior knowledge and skills)
Students will bring to the activities a background knowledge of the immigrant experience. Students will have had experience in brainstorming, webbing, constructing and interpreting maps, categorizing, hypothesizing, synthesizing, and analyzing.

C. Lesson sequence

Students will:

1. Brainstorm motivations for immigrating to America by various ethnic groups.
2. Use a webbing tecnique to demonstrate inter-relationships between these two concepts.
3. Demarcate on a world map the major ethnic groups who immigrated to America in the past century.
4. Hypothesize the reasons ethnic groups settled in large concentrations in various parts of the United States.
5. Compare and contrast geographical, economical, and cultural patterns in the immigrants homeland and in the location of the settlements in America. Students will postulate reasons for inhabiting various geographic locations.
6. Refer to their web on motivation for immigrating to America and draw similaraities between motivation for immigrating and choices of geographic location.
7. Brainstorm attributes that effect acquisition of power, social prestige and wealth in America.
8. Use the webbing technique to demonstrate a correlation with power, social prestige, and wealth.
9. Arrange ethnic groups along a continuum. Students will use continuum for each of the above criterion.
10. Develop a paragraph describing the ethnic group which in their opinion has achieved social prestige, power, and wealth fastest and why.

G. Metacognition

Students will ask themselves the following:

1. How did I go about selecting this information?
2. How did I decide where to place this bit of information?
3. What problems did I run in to with selecting this information?
4. As I am writing down this data, what did I think of while doing this?
5. How did I decide these two pieces of information contained a corresponding element?

IV. Transfer

Students will employ the strategy of comparing and finding a corresponding element in all content area classes. Upon completion of the lessons, students will brainstorm where the strategies could be employed in the future.

Lesson Plan

for Grades Two, Three and Four

Classifying Foods

Linda Lantini
Classroom Teacher
Hanover School
Meriden

I. Objective

- A. Behavioral objective
  The children will be able to classify edible foods into the correct food group
- B. Thinking skills
  1. Analysis: Classification

II. Disposition/Attitudes

- A. Focus
  1. This lesson is intended for a self-contained learning disability classroom. The basic reading/writing level is kindergarten through grade one. Attention is emphasized on pacing the quality of decision-making without discouraging/frustrating the students.
  2. Questions will be directed to children in respect to skill and personality. All answers will be acknowledged with an encouraging response. Discussions will be on-going and open-ended.

III. Lesson Plan Core

- A. Immediate purpose of lesson
  The children will be able to classify edible foods from three daily meals into four food groups:
  1. Breads and cereals
  2. Fruits and vegetables
  3. Meat and fish
  4. Dairy products.
- B. Student background knowledge (prior knowledge and skills)
  The children can name and identify common foods. They will be able to define the attributes of each food group.

C. Student activities
   1. The children will recall items from their breakfast, lunch, and dinner.
   2. The food group for that item will be identified and written/drawn in the correct column on the blackboard.
   3. A duplicate of the columns drawn on the blackboard will be transferred to a ditto. This ditto will be taken home for the next three or four days as a homework assignment.
   4. A letter will be sent home outlining the thought process that should be enlisted by the parent if the child asks for assistance. The worksheet must be returned each day for class discussion.

D. Instructional materials
   1. Blackboard
   2. Ditto
   3. Transparency

E. Instructional techniques

Discussion: Children will name and classify items that they had for breakfast. Upon classifying the food item, the children will be required to justify their answers. If the child becomes anxious and/or unable to answer, the teacher will employ more appropriate level questions (multiple choice, yes/no) and then lead the child back to the original justification. Repeat activity about lunch.

F. Lesson sequence
   1. Teacher draws four columns on blackboard with the following labels: "Fruits and Vegetables", "Meat and Fish", "Bread and Cereals" and "Dairy Products".
   2. The teacher will hand out a similar ditto to the children to be used later.
   3. The teacher asks the students to name foods they had for breakfast.
   4. The teacher asks the child to name the food group in which the food item belongs
   5. The teacher asks the child for justification.
   6. The teacher (or child) can write/draw answers in the correct column.
   7. Repeat procedure with lunch items.
   8. Teacher refers child to ditto. Make sure child understands how to use the chart.
   9. Teacher explains to the children that they will take the chart home and record all three meals for three to four days. They may ask parents for help.

G. Metacognition
    1. Each time the children make a decision the teacher will require justification. The children will be encouraged to recall known facts that will lead to their decision.

IV. Transfer

A. Application of these thinking skills
Children could transfer classification skills to phonetic analysis in reading; descriptive attributes such as hard/soft; how people live, eat, celebrate holidays in different countries; classifying activities at home, school, school, play, etc.

B. Follow up activities
Comparison activity involving foods from different countries and early times (settlers, Pilgrims, Indians, planning meals (Thanks-giving, picnics, etc.).

"Economic Productivity, Then and Now: A Comparative Geography Project"

[Cooperative Development of Critical Thinking Skills]

Memorial Boulevard School
Bristol, CT 06010

Michael D. Leahy, Ph.D.
Library Media Teacher

["Learning without thought is labor lost" Confucius]

Scope

The grade seven geography project (for "A" and "B" track students) which is described below is intended to bring together four constructs of activity: mastery of the formatting and documentation of geography subject matter content, modeling of a format and procedures for preparing an extended assignment, facility with several selected library media reference resources, and practice with applied critical thinking skills. Organized convergently to provide seventh grade students with a clear-cut format for information search, selection, analysis, and synthesis, this project lesson plan allows for students' practice in divergent search through selected multiple sources. This activity is intended for implementation early in the school year, to promote students' mastery of specific thinking skills and learning tasks, and to promote their facility with specific library media reference sources, applicable to the whole year's study of geography. The intended duration of this unit assignment is approximately four weeks, conducted at intervals during that time span. The product output is conceived as an organization and sequencing of comparative statistical data, coupled with narrative responses to selected critical thinking questions. The evaluation of the product output is intended to center on the logical consistency of narrative response to the critical thinking questions and the adequacy of their substantiation with the student-selected statistical data.

Instructional Objectives

This project is intended to promote the following instructional objectives:

1. to provide practice with specific critical thinking skills:
    * reasoning skills
        - classifying data.
        - comparing similarities and differences.
        - distinguishing between facts and opinions.
        - identifying consequences.
    * problem-solving
        - generating related ideas.
    * inferences
        - determining relevant information.
        - recognizing relationships.
        - drawing inferences from compared/contrasted data.

2. to promote practice with the higher levels of the Bloom's Taxonomy, i.e., analysis, synthesis, and evaluation.

3. to promote students' facility with specific selected library media resources.

4. to provide student-practice with specific library media search skills:
    - using an index to a reference volume efficiently and accurately.
    - recognizing special characteristics and features of selected reference sources.
    - identifying salient information.
    - recording salient information (notetaking).

5. to provide a model for the organization and preparation of a long-term class assignment, incrementally developed to reduce students' anxiety regarding the production of such a project.

Project Behavioral Objectives

Students will be able to:

1. identify several reference sources useful for locating comparative statistical data about nations of the world.

2. search multiple resources for locating statistical data about a nation.

3. search indexes, locating specific topical information.

4. select specific data relevant to assigned topics.

5. distinguish between facts and inferences, given statistical data presented with narrative commentary.

6. discriminate relevant from irrelevant data.

7. compile tables of comparative data on specific topics.

8. organize statistical data in meaningful order for consistent interpretation.

9. discriminate current from outdated statistical data.

10. compare statistical data from different time periods.

11. infer relationships between industrial and agricultural productivity, and their effects upon national standard of living, given relevant statistical data.

Project Activities

1. Each class member will select a specific western or eastern European nation, for application to this project, from a provided list:

Austria
Belgium
Denmark
East Germany
England
Finland
France
Ireland
Italy
Netherlands
Norway
Poland
Portugal
Spain
Sweden
Switzerland
West Germany
Yugoslavia

2. As a *prerequisite activity*, the class as a whole will be instructed in the specific organization patterns [formats, contents, and indexing] and study applications of selected library media reference sources relevant to geography, and will practice the search and location of specific factual data in each selected source:

- *Background Notes* (U. S. Department of State)
- *National Geographic Index: 1947-1983*
- *Statesman's Yearbook* [2 editions: "old"--circa 1960, and "new"--the *current* edition]
- *World Almanac and Book of Facts*
- *Worldmark Encyclopedia of the Nations*

3. As a *prerequisite activity*, instruction in the analysis of representative samples of *data tables* will be conducted as a class-group activity.

4. As a *prerequisite activity*, selected terminology relevant to the efficient use of the selected reference sources will be mastered: e.g., GNP, hectare, per capita income, and ratio.

5. Each class member will independently search specified reference sources [in the library media center] for specified *data collection*, in incremental steps, as follows:

Data Collection

step one: single reference, current source fact-search (brief-entry source):

World Almanac and Book of Facts [*current* edition]: population; per capita income; urban/rural ratio; economy (industries, chief crops, minerals, arable land, meat production, fish catch, electricity production, and labor force.)

step two: data supplement with alternate, more extensive sources (relatively current):

Worldmark Encyclopedia of the Nations:
population; economy; income; labor; agriculture; animal husbandry; fishing; mining; energy and power.

Background Notes [U.S. Department of State]:
economy (GNP, work force ratios, natural resources, agriculture, industry, trade)

step three: fact-search using two editions of a single reference source (for data comparison over lapses of at least two decades):

The Statesman's Year-Book, circa 1961 edition and current edition: population; GNP per capita; agriculture (acreage and crop output for four major crops, in one specific year); industry (output of four major raw materials and four major products, the same specific year.)

step four: location of a pre-assigned periodical article, circa 1950s, from backfiles of National Geographic magazine, and analysis of article contents illustrating "historical perspective" and contrasts over time, regarding the nation's economy and productivity. [Includes use of National Geographic Index: 1947-1983, to locate the specific periodical issue involved.]

Titles of National Geographic Articles

Austria: "Occupied Austria, Outpost of Democracy"
Belgium: "Belgium Comes Back"
Denmark: "Thumbs Up Round the North Sea's Rim"
East Germany: "Berlin, On Both Sides of the Wall"
England: "A Stroll to London"
Finland: "Scenes of Postwar Finland"
France: "Around the World in Eighty Days"
Ireland: "The Magic Road Round Ireland"
Italy: "Italy Smiles Again"
Netherlands: "Helping Holland Rebuild Her Land"
Norway: "Native's Return to Norway"
Poland: "Poland Opens Her Doors"
Portugal: "Portugal is Different"
Spain: "Speaking of Spain"
Sweden: "Thumbs Up Around the North Sea's Rim"
Switzerland: "Switzerland Guards the Roof of Europe"
West Germany: "What I Saw Across the Rhine"
Yugoslavia: "Yugoslavia, Between East and West"

6. Data Organization

Concurrent with data collection, students will complete a standardized table entry form which will organize all selected current data for the nation. Students will be required to construct a compatible table entry form to organize the comparison of 1950s data with 1980s data, for their selected nation.

7. Data Analysis

The folowing higher-order critical thinking questions (standardized to accommodate uniformly the data collection for all 18 selected nations) shall be applied by each student to the data collected on the selected nation, with each student required to list and defend inferences developed from interpretations of the data.

- If there is an increase in production for a selected agricultural crop from a selected year in the 1950s to a selected year in the 1980s, what inferences can be made to explain this increase, based on the numerical and descriptive data collected?
- In comparing the relationship of agricultural and industrial data to the GNP of a selected year in the 1950s with similar data from a selected year in the 1980s, what inferences can be made to explain growth or decline of GNP, agricultural, or industrial output?
- What evidence can you provide to defend the conclusion that the selected nation has experienced an (increase or decrease) in national standard of living? [dependent upon specific data for the selected nation]

Transfer

The following skills are intended as transferable to other learning and study tasks (in geography as well as other subject areas):

- using indexes for fact-search.
- using multiple sources when undertaking a fact-search.
- interpreting charts and tables.
- organizing comparative statistical data into tables.
- comparing and contrasting statistical data.
- drawing inferences from statistical data.

World Almanac and Book of Facts. New York: Newspaper Enterprise Association, Inc., 1985. (yearly-update issue)

- call number: Ref./317.3/World Almanac [located in general reference shelves].
- among many other types and entries of factual information, includes a large section: "Nations of the World."
- follows a fairly standardized organizational pattern of information for most countries listed:
  * people
  * geography
  * government
  * economy
  * finance
  * transport
  * communication
  * health
  * education
  * major international organizations
  * U.S. embassy
  * history
- must use the "general index" at the beginning of the book to locate specific countries desired.
- terms and abbreviations to understand, before using the World Almanac and Book of Facts section on "Nations of the World":
  * mln = million [1,000,000]
  * bln = billion [1,000,000,000]
  * metric ton = 1.1023 tons (@ 2,000 lb./ton)

Library Media Center
Memorial Boulevard School
MDL: 10/86

THE AUTHORITY SINCE 1868

THE WORLD ALMANAC
AND BOOK OF FACTS
1986

FOR REFERENCE
Do Not Take From This Room

NEA
Published annually by
NEWSPAPER ENTERPRISE ASSOCIATION INC.
New York

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rival group. The election of 1947 was completely dominated by the Communists.

In compensation for 69,860 sq. mi. ceded to the USSR, 1945, Poland received approx. 40,000 sq. mi. of German territory E of the Oder-Neisse line comprising Silesia, Pomerania, West Prussia, and part of East Prussia.

In 12 years of rule by Stalinists, large estates were abolished, industries nationalized, schools secularized, and Roman Catholic prelates jailed. Farm production fell off. Harsh working conditions caused a riot in Poznan June 28-29, 1956.

A new Politburo, committed to development of a more independent Polish Communism, was named Oct. 1956, with Wladyslaw Gomulka as first secretary of the Communist Party. Collectivization of farms was ended and many collectives were abolished.

In Dec. 1970 workers in port cities rioted because of price rises and new incentive wage rules. On Dec. 20 Gomulka resigned as party leader; he was succeeded by Edward Gierek; the incentive rules were dropped, price rises were revoked.

Poland was the first Communist state to get most-favored nation trade terms from the U.S.

A law promulgated Feb. 13, 1953, required government consent to high Roman Catholic church appointments. In 1956 Gomulka agreed to permit religious liberty and religious publications, provided the church kept out of politics. In 1961 religious studies in public schools were halted. Government relations with the Church improved in the 1970s. The number of priests and churches was greater in 1971 than in 1939.

After 2 months of labor turmoil had crippled the country, the Polish government, Aug. 30, 1980, met the demands of striking workers at the Lenin Shipyard, Gdansk. Among the 21 concessions granted were the right to form independent trade unions and the right to strike — unprecedented political developments in the Soviet bloc. By 1981, 9.5 mln. workers had joined the independent trade union (Solidarity). Farmers won official recognition for their independent trade union in May. Solidarity leaders proposed, Dec. 12, a nationwide referendum on establishing a non-Communist government if the government failed to agree to a series of demands which included access to the mass media and free and democratic elections to local councils in the provinces.

Spurred by the fear of Soviet intervention, the government, Dec. 13, imposed martial law. Public gatherings, demonstrations, and strikes were banned and an internal and external blackout was imposed. Solidarity leaders called for a nationwide strike, but there were only scattered work stoppages. Lech Walesa and other Solidarity leaders were arrested. The U.S. imposed economic sanctions which were lifted when martial law was suspended December 1982.

In 1983 there were demonstrations outside the Lenin Shipyards in March, and antigovernment protests in some 20 cities in May. Pope John Paul II visited his homeland in June.

A government directive ordering the removal of crucifixes from public schools and hospitals sparked student demonstrations in the Mietno region, March 1984.

Portugal

Republic of Portugal

People: Population (1984 est.): 10,045,000. **Age distrib.** (%): 0–14: 27.9; 15–59: 57.9; 60+: 14.3. **Pop. density:** 277 per sq. mi. **Ethnic groups:** Homogeneous Mediterranean stock with small African minority. **Languages:** Portuguese. **Religions:** Roman Catholics 97%.

Geography: Area: 36,390 sq. mi., slightly smaller than Indiana. **Location:** At SW extreme of Europe. **Neighbors:** Spain on N, E. **Topography:** Portugal N of Tajus R, which bisects the country NE-SW, is mountainous, cool and rainy. To the S there are drier, rolling plains, and a warm climate. **Capital:** Lisbon. **Cities** (1981 est.): Lisbon 812,400.

Government: Type: Parliamentary democracy. **Head of state:** Pres. Antonio dos Santos Ramalho Eanes; b. Jan. 25, 1935; in office: July 14, 1976. **Head of government:** Prime Min. Mario Soares; b. Dec. 7, 1924; in office: June 9, 1983. **Local divisions:** 18 districts, 2 autonomous regions, one dependency. **Defense:** 3% of GNP (1983).

Economy: Industries: Textiles, footwear, cork, chemicals, fish canning, wine, paper. **Chief crops:** Grains, potatoes, rice, grapes, olives, fruits. **Minerals:** Tungsten, uranium, iron. **Other resources:** Forests (world leader in cork production). **Arable land:** 39%. **Meat prod.** (1984): beef: 102,000 metric tons; pork: 180,000 metric tons; lamb: 25,000 metric tons. **Fish catch** (1982): 253,000 metric tons. **Electricity prod.** (1982): 14.6 bln. kwh. **Crude steel prod.** (1982): 362,000 metric tons. **Labor force:** 24% agric.; 31% ind. and comm.; 44% services and govt.

Finance: Currency: Escudo (Mar. 1985: 171.32 = $1 US). **Gross domestic product** (1984): $19.4 bln. **Per capita income** (1984): $1,930. **Imports** (1984): $7.3 bln.; partners: W. Ger. 12%, U.S. 11%, UK 8%, Fr. 9%. **Exports** (1984): $6.2 bln.; partners: UK 15%, W. Ger. 13%, Fr. 13%, U.S. 6%. **Tourists** (1982): 3.0 mln. **National budget** (1985): $8.2 bln. expenditures. **International reserves less gold** (Jan. 1985): $598 mln. **Gold:** 20.28 mln. oz t. **Consumer prices** (change in 1984): 28.9%.

Transport: Railway traffic (1982): 5.4 bln. passenger-km; 1.0 bln. net ton-km. **Motor vehicles:** in use (1980): 1.2 mln. passenger cars, 186,100 comm. vehicles. **Civil aviation** (1982): 4.1 bln. passenger-km; 108.7 mln. freight ton-km. **Chief ports:** Lisbon, Setubal, Leixoes.

Communications: Television sets: 1.4 mln. licensed (1983). **Radios:** 2.1 licensed (1983). **Telephones in use** (1982): 1.4 mln. **Daily newspaper circ.** (1982): 74 per 1,000 pop.

Health: Life expectancy at birth (1980): 68 male; 74 female. **Births** (per 1,000 pop. 1981): 15.7. **Deaths** (per 1,000 pop. 1981): 9.9. **Natural increase** (1981): .5%. **Hospital beds** (per 100,000 pop. 1977): 526. **Physicians** (per 100,000 pop. 1977): 142. **Infant mortality** (per 1,000 live births 1985): 39.

Education (1986): **Literacy:** 80%. **Years compulsory:** 6; attendance 80%.

Major International Organizations: UN and its specialized agencies, NATO, EFTA, OECD.

Embassy: 2125 Kalorama Rd. NW 20008; 265-1643.

Portugal, an independent state since the 12th century, was a kingdom until a revolution in 1910 drove out King Manoel II and a republic was proclaimed.

From 1932 a strong, repressive government was headed by Premier Antonio de Oliveira Salazar. Illness forced his retirement in Sept. 1968; he was succeeded by Marcello Caetano.

On Apr. 25, 1974, the government was seized by a military junta led by Gen. Antonio de Spinola, who was named president.

The new government reached agreements providing independence for Guinea-Bissau, Mozambique, Cape Verde Islands, Angola, and Sao Tome and Principe. Spinola resigned Sept. 30, 1974, in face of increasing pressure from leftist officers. Despite a 64% victory for democratic parties in April 1975, the Soviet-supported Communist party increased its influence. Banks, insurance companies, and other industries were nationalized. A countercoup in November halted this trend. After years of turmoil the economy and political life were in disarray, despite aid from the U.S. and West European countries.

Azores Islands, in the Atlantic, 740 mi. W. of Portugal, have an area of 888 sq. mi. and a pop. (1975) of 292,000. A 1951 agreement gave the U.S. rights to use defense facilities in the Azores. The **Madeira Islands,** 350 mi. off the NW coast of Africa, have an area of 307 sq. mi. and a pop. (1976) of 270,000. Both groups were offered partial autonomy in 1976.

Macao, area of 6 sq. mi., is an enclave, a peninsula and 2 small islands, at the mouth of the Canton R. in China. Portugal granted broad autonomy in 1976. Pop. (1984 est.): 400,000.

Qatar

State of Qatar

People: Population (1984 est.): 276,000. **Pop. density:** 62.7 per sq. mi. **Ethnic groups:** Arabs 40%, Pakistani 18%, Indian 18%, Iranian 10%, others. **Languages:** Arabic (official), English. **Religions:** Moslems 95%.

Geography: Area: 4,247 sq. mi., smaller than Connecticut. **Location:** Occupies peninsula on W coast of Persian Gulf. **Neighbors:** Saudi Arabia on W, United Arab Emirates on S. **Topography:** Mostly a flat desert, with some limestone ridges; vegetation of any kind is scarce. **Capital:** Doha. **Cities** (1985 est.): Doha 190,000.

Government: Type: Traditional emirate. **Head of state and head of government:** Khalifah ibn Hamad ath-Thani; b. 1932; in office: Feb. 22, 1972 (amir), 1970 (prime min.). **Defense:** 25% of govt. budget (1983).

National Geographic Index. Washington, D.C.: National Geographic Society, 1984.

- call number: Ref./910.5/National Geographic [located on top shelf of encyclopedia reference shelves].

- an index to National Geographic magazines, from 1947 through 1983 in one volume, with a paper supplement covering issues from 1984 through 1985.

- the index is arranged alphabetically by word, and provides access to all articles in the National Geographic by subject, by author, and by photographer.

- the index also lists books, map supplements, television films, and other educational materials--with access by medium of production and by subject.

- on the bottom of each right-hand page is provided a symbol key to the type of entry being indexed:
    * black dot = articles
    * red diamond = books
    * blue triangle = maps
    * yellow dot = television program

- each article entry contains:
  title of article, in quotation marks; author(s) name(s); page(s) of article; month and year of issue where article is to be found.

- article titles themselves are not indexed; you must know the name of the author or the subject (e.g., the name of the country).

- an article title itself often does not explain the content of the article; plan on carefully examining the article itself.

- to retrieve an article, provide the library media teacher with the month and year of the specific issue desired, and keep for yourself a listing of the article title, author(s), and page(s) of the article.

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THE NATIONAL GEOGRAPHIC MAGAZI
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INDEX 1947-1983

● The Search for the First Americans. By Thomas Y. Canby. Photos by Kerby Smith. Paintings by Roy Andersen. 330-363, Sept. 1979
● South Dakota's Badlands: Castles in Clay. By John Madson. Photos by Jim Brandenburg. Included: Oligocene mammal fossils; Fossilized turtles. 524-539, Apr. 1981
● *See also* Paleontology

FOSTER, BRISTOL: Author:
● Africa's Gentle Giants (Giraffes). Photos by Bob Campbell and Thomas Nebbia. 402-417, Sept. 1977

FOSTER, JOSEPH T.: Author:
● Folger: Biggest Little Library in the World. Photos by B. Anthony Stewart and John E. Fletcher. 411-424, Sept. 1951

FOSTER, MULFORD B.:
Author-Photographer:
● Puya, the Pineapple's Andean Ancestor. 463-480, Oct. 1950

FOUND–a Lost Virginia Settlement (Martin's Hundred). By Ivor Noel Hume. Photos by Ira Block. Paintings by Richard Schlecht. 735-767, June 1979

FOUND at Last: the Monarch's Winter Home. By Fred A. Urquhart. Photos by Bianca Lavies. NGS research grant. 161-173, Aug. 1976

FOUNDERS of New England. By Sir Evelyn Wrench. Photos by B. Anthony Stewart. 803-838, June 1953

FOUNDERS of Virginia. By Sir Evelyn Wrench. Photos by B. Anthony Stewart. 433-462, Apr. 1948

FOUNTAIN of Fire in Hawaii. By Frederick Simpich, Jr. Photos by Robert B. Goodman and Robert Wenkam. 303-327, Mar. 1960

FOUR CORNERS COUNTRY (Arizona-Colorado-New Mexico-Utah):
● The Anasazi–Riddles in the Ruins. By Thomas Y. Canby. Photos by Dewitt Jones and David Brill. Paintings by Roy Andersen. 554-592, Nov. 1982
● Inside the Sacred Hopi Homeland. By Jake Page. Photos by Susanne Page. 607-629, Nov. 1982
● Pueblo Pottery–2,000 Years of Artistry. By David L. Arnold. 593-605, Nov. 1982
● Roaming the West's Fantastic Four Corners. By Jack Breed. 705-742, June 1952
▲ *The Southwest*, The Making of America series. Included: Arizona, New Mexico, and parts of California, Colorado, Texas, Utah; and in Mexico: Baja California Norte, Chihuahua, Sonora. On reverse: 12,000 Years of History; Spanish Conquest; Anglo-American Entry and Occupancy. Nov. 1982
● Stalking the West's Wild Foods. By Euell Gibbons. Photos by David Hiser. 186-199, Aug. 1973
● *See also* Mesa Verde National Park; Rainbow Bridge National Monument; *and* Navajos

The **FOUR-EYED** Fish Sees All. Photos by Paul A. Zahl. Text by Thomas O'Neill. 390-395, Mar. 1978

4-H CLUBS:
● America Goes to the Fair. By Samuel W. Matthews. 293-333, Sept. 1954
● Down on the Farm, Soviet Style–a 4-H Adventure. By John Garaventa. Photos by James Tobin and Carol Schmidt. 768-797, June 1979
● 4-H Boys and Girls Grow More Food. By Frederick Simpich. 551-582, Nov. 1948

FOUR-OCEAN Navy in the Nuclear Age. By Thomas W. McKnew. 145-187, Feb. 1965

A **FOUR-PART** Look at the Isles of the Pacific. 732-793, Dec. 1974

FOUR Years of Diving to the Bottom of the Sea. By Georges S. Houot. 715-731, May 1958

"**1470 MAN.**" *See* Skull 1470

A **14TH-CENTURY** Cargo Makes Port at Last. Photos by H. Edward Kim. Introduction by Donald H. Keith. 231-243, Aug. 1979

FOWL, Japanese Long-Tailed
● Scientist Studies Japan's Fantastic Long-tailed Fowl. By Frank X. Ogasawara. Photos by Eiji Miyazawa. NGS research grant. 845-855, Dec. 1970

FOX, CHARLES J.:
● Portrait of Gilbert H. Grosvenor. 252, 258, Aug. 1949

FOX, CHARLES PHILIP:
Photographer:
● Br'er Possum, Hermit of the Lowlands. By Agnes Akin Atkinson. 405-418, Mar. 1953
● Skunks Want Peace–or Else! By Melvin R. Ellis. 279-294, Aug. 1955

FOXES:
● Foxes Foretell the Future in Mali's Dogon Country. By Pamela Johnson Meyer. 431-448, Mar. 1969
● The Romance of American Furs. By Wanda Burnett. 379-402, Mar. 1948

The **FRAGILE** Beauty All About Us. Photos by Harry S. C. Yen. 785-795, Dec. 1970

FRAGILE Nurseries of the Sea: Can We Save Our Salt Marshes? By Stephen W. Hitchcock. Photos by William R. Curtsinger. 729-765, June 1972

FRAME, GEORGE W. and LORY HERBISON:
Author-Photographers:
● Cheetahs: In a Race for Survival. 712-728, May 1980

FRANCE:
● Across the Ridgepole of the Alps. By Walter Meayers Edwards. 410-419, Sept. 1960
● The Alps: Man's Own Mountains. By Ralph Gray. Photos by Walter Meayers Edwards and William Eppridge. Included: Mont Blanc highway tunnel, from Haute Savoie, France, to Valle d'Aosta, Italy. 350-395, Sept. 1965
● "Around the World in Eighty Days." By Newman Bumstead. Included: Avignon; Corsica; Lyon; Marseille; Mont Blanc; Montpellier; Paris. 705-750, Dec. 1951
● Bordeaux: Fine Wines and Fiery Gascons. By William Davenport. Photos by Adam Woolfitt. 233-259, Aug. 1980
● The Celts. By Merle Severy. Photos by James P. Blair. Paintings by Robert C. Magis. 582-633, May 1977
● The Civilizing Seine. By Charles McCarry. Photos by David L. Arnold. 478-511, Apr. 1982
● The Diffident Truffle, France's Gift to Gourmets. 419-426, Sept. 1956
● The Enduring Pyrenees. By Robert Laxalt. Photos by Edwin Stuart Grosvenor. 794-819, Dec. 1974
● Eternal France. By Walter Meayers Edwards. 725-764, June 1960
● Exploring the Mind of Ice Age Man. By Alexander Marshack. 64-89, Jan. 1975
▲ *France, Belgium, and the Netherlands*, Atlas series supplement. June 1960
● France's Past Lives in Languedoc. By Walter Meayers Edwards. 1-43, July 1951
● French Riviera: Storied Playground on the Azure Coast. By Carleton Mitchell. Photos by Thomas Nebbia. 798-835, June 1967
● Here Rest in Honored Glory . . . The United States Dedicates Six New Battle Monuments in Europe to Americans Who Gave Their Lives During World War II. By Howell Walker. Included: Brittany, Épinal, Normandy, and Rhône monuments. 739-768, June 1957
● High Road in the Pyrenees. By H. V. Morton. Photos by Justin Locke. 299-334, Mar. 1956
● The Incredible Potato. By Robert E. Rhoades. Photos by Martin Rogers. Included: Académie Parmentier, Limonest, a gastronomic society devoted to honoring the potato. 668-694, May 1982
● Inside Europe Aboard *Yankee*. By Irving and Electa Johnson. Photos by Joseph J. Scherschel. 157-195, Aug. 1964
● Land of the Ancient Basques. By Robert Laxalt. Photos by William Albert Allard. 240-277, Aug. 1968
● Life in the Land of the Basques. By John E. H. Nolan. Photos by Justin Locke. 147-186, Feb. 1954
● Living the Good Life in Burgundy. By William Davenport. Photos by Robert Freson. 794-817, June 1978
● Napoleon. By John J. Putman. Photos by Gordon W. Gahan. 142-189, Feb. 1982
● A New Look at Medieval Europe. By Kenneth M. Setton. Paintings by Andre Durenceau and Birney Lettick. 799-859, Dec. 1962
● 900 Years Ago: The Norman Conquest. By Kenneth M. Setton. Photos by George F. Mobley. 206-251, Aug. 1966

Background Notes. United States Department of State: Bureau of Public Affairs.

- various countries of the world described in pamphlet form, arranged alphabetically by letter, in two ring binders (A-L and M-Z).
- available by request at main desk.
- a standardized organizational pattern is used for all Background Notes titles, on a "Profile" page:
    - locator map
    - official name
    - people
    - geography
    - government
    - economy
    - membership in international organizations
- contents pages vary, but generally provide information on the country's geography, people, history, government, principal government officials, political candidates, economy, foreign relations, travel notes, and principal U.S. officials.
- each Background Notes pamphlet is dated, to indicate how up-to-date the information is.
- each pamphlet may legally be photocopied for student use, upon request.
- terms to understand, before using Background Notes:
    - * GNP (gross national product): the total money value of all final goods and services a nation produces.
    - * per capita: per person.
    - * GDP (gross domestic product): the total gross expenditure, in purchaser's values, on the domestic supply of goods and services (final use).

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background notes

Ireland

United States Department of State
Bureau of Public Affairs

May 1984

Atlantic Ocean
North Sea
IRELAND
Dublin
FRANCE

Official Name:
Ireland

PROFILE

People

Nationality: *Noun*—Irishman, Irishwoman. *Adjective*—Irish. **Population** (1981 census—prelim.): 3,443,405. **Annual growth rate:** 1.1%. **Ethnic groups:** Celtic, with English minority. **Religions:** Roman Catholic 94%, Anglican 4%. **Languages:** English, Irish (Gaelic). **Education** (8.7% of GNP): *Years compulsory*—10. *Attendance*—91%. *Literacy*—99%. **Health:** *Infant mortality rate*—12.4/1,000. *Life expectancy*—72 yrs. **Work force** (1979): *Agriculture, forestry, and fishing*—26%. *Manufacturing*—19%. *Commerce*—15%. *Construction*—7%. *Transportation*—5%. *Government*—4%. *Other*—24%.

Geography

Area: 70,282 sq. km. (27,136 sq. mi.); slightly smaller than W. Va. **Cities:** *Capital*—Dublin (pop. 525,360; about 1 million in metropolitan area or one-third the total population). *Other cities*—Cork (136,269), Limerick (60,721), Galway, Waterford, Kilkenny. **Terrain:** 17% arable, 51% meadows and pastures, 3% forested, 2% inland water, 27% waste and urban. **Climate:** Temperate maritime.

Government

Type: Parliamentary republic. **Independence:** 1921; **Constitution:** December 29, 1937.

Branches *Executive*—president (chief of state); prime minister (head of government). *Legislative*—bicameral National Parliament: House of Representatives (Dail—pronounced "doyle"), Senate (Seanad—pronounced "SHEN-ad"). *Judicial*—Supreme Court.

Administrative subdivision: 26 counties.

Major political parties: Fianna Fail, Fine Gael, Labor Party. **Suffrage:** Universal over 18.

Defense: 2% of GNP.

Flag: Three vertical bands—green, white, and orange from left to right. Green represents the Gaelic and Norman-Irish tradition; orange refers to the role of William of Orange and the Protestant tradition; and white symbolizes peace and understanding between the two communities.

Economy

GNP (1983 est.): $16.5 billion. **Annual growth rate** (1983): 0%. **Per capita income:** $4,750. **Inflation rate** (CPI): 10.5% in 1983.

Natural resources: Zinc, lead, natural gas, barite, copper, gypsum, limestone, dolomite, peat, silver.

Agriculture (10% of GNP): Cattle and dairy products, potatoes, barley, sugar beets, hay, silage, wheat.

Industry (32% of GNP): Food processing, beverages, electronics and data processing, engineering, textiles and clothing, chemicals and pharmaceuticals, and construction.

Trade (1983): *Exports*—$8.7 billion—computer equipment, chemicals, meat, dairy products, machinery. *Major markets*—UK 36.9%, other EC countries 32.1%, US 8.1%. *Imports*—$9.2 billion: grains, petroleum products, machinery, transport equipment, chemicals, textile yarns. *Major suppliers*—UK 45.8%, other EC countries 22.0%, US 14.8%.

Exchange rate (1982 avg.): 0.80 Irish pounds = US$1.

Economic aid received: European Regional Fund—$82.6 million (1982); European Social Fund—$91.5 million (1982); *US aid*—none. *Economic aid sent* (1983): $37.6 million or 0.23% of GNP.

Membership in International Organizations

UN and many of its specialized agencies, Council of Europe, European Community (EC), OECD, GATT, IMF, World Bank, INTELSAT.

Name______________________________ Date______________________

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Worksheet: Locating Information in Background Notes

Country____________________ Date of pamphlet______________

1. What is the official name of the country you have been assigned? ______________________________

2. What is a native of the country called? ______________________

3a. What is the population of the country? ____________________

b. How recent is the population count? ____________________

c. What is the rate of growth of the population? ________________

4. What language(s) is/are spoken in the country? ______________________________

5a. What is the GNP (or GDP) of the country? ____________________

b. For what year is the GNP (or GDP) listed? ____________________

6. What is the per capita income in this country? ________________

7. What percentage of the GNP is spent on defense of the country? ________________

Study the following items of information:

- percentage of GNP (or GDP) derived from agriculture.
- percentage of GNP (or GDP, or NNT) derived from industry or trade.
- dollar amount of exports, as compared with total GNP (or GDP). Hint: set up a ratio of export $ to total GNP.

After matching these data against each other, draw some inferences [conclusions or deductions drawn from evidence] about the economic level and economic base of the country. [OVER]

The Statesman's Year-book, 123rd edition. New York: St. Martin's Press, 1986.

- call number: Ref./310/Paxton [located in general reference shelves].
- an annually-updated yearbook.
- organized into three parts:
    - * comparative tables, for various farm crops, petroleum, and agricultural labor--country by country, and over a selected period of years.
    - * descriptions of International Organizations.
    - * descriptions and statistics for countries of the world, arranged alphabetically.
- follows a fairly standardized organizational pattern of information for most countries:
    - * history
    - * area and population
    - * climate
    - * constitution and government
    - * defense
    - * economy
    - * energy and natural resources
    - * industry and trade
    - * tourism
    - * communications
    - * justice, religion, education, and welfare
- includes two indexes:
    - * Place and International Organizations Index
    - * Product Index

  (be sure to use the proper index, depending on your purpose for searching information)
- has a table of weights and measures, including abbreviations, at the very beginning of the book.

[over]

- terms to understand, before using Statesman's Year-book:
    - * hectare: a metric measure of land area; 1 hectare = 2.471 acres.
    - * bu. = bushel: a dry weight measure, with weight varying according to crop being measured.
    - * tonne: a metric measure of weight; 1 tonne = 1.1023 tons (@ 2,000 lb./ton).

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THE STATESMAN'S YEAR-BOOK

STATISTICAL AND HISTORICAL ANNUAL
OF THE STATES OF THE WORLD
FOR THE YEAR
1986–1987

EDITED BY

JOHN PAXTON

ST. MARTIN'S PRESS
NEW YORK

FEDERAL REPUBLIC OF GERMANY

Capital Bonn
Population 61m. (1984)
GNP per capita US$11,420 (1983)

Bundesrepublik Deutschland

HISTORY. The Federal Republic of Germany became a sovereign independent country on 5 May 1955 and is a member of EEC, the Council of Europe, Western European Union, NATO, the European Coal and Steel Community, Euratom, the European Monetary Agreement and the Agencies of the UN.

In June 1948 USA, UK and France agreed on a central government for the 3 western zones. An Occupation Statute, which came into force on 30 Sept. 1949, reduced the responsibilities of the occupation authorities. Formally, the Federal Republic of Germany came into existence on 21 Sept. 1949. The Petersberg Agreement of 22 Nov. 1949 freed the Federal Republic of numerous restrictions of the Occupation Statute. In 1951 USA, UK and France as well as other states terminated the state of war with Germany; the Soviet Union followed on 25 Jan. 1955. On 5 May 1955 the High Commissioners of USA, UK and France signed a proclamation revoking the Occupation Statute. On the same day, the Paris and London treaties, signed in Oct. 1954, came into force and established the sovereignty of the Federal Republic of Germany.

AREA AND POPULATION. Federal Germany is bounded north by Denmark and the North and Baltic Seas, east by the German Democratic Republic, and Czechoslovakia, south-east and south by Austria, south by Switzerland and west by France, Luxembourg, Belgium and the Netherlands. Area: 248,706 sq. km. Population, at 31 Dec. 1984, 61,049,000; at 30 June 1984, 61,175,000 (29,241,000 males). Density 246 per sq. km. In April 1949 some minor frontier rectifications were carried out in favour of the Netherlands (68 sq. km), Belgium (18 sq. km), Luxembourg (6 sq. km) and France (7 sq. km), subject to a final peace settlement. Belgium (1956) and the Netherlands (1963) returned most of this territory to Germany.

The capital is Bonn.

Area and population of the Länder as at 30 June 1984:

Länder	*Area in sq. km*	*Population (Males in brackets)*		*Per sq. km*
Schleswig-Holstein	15,721	2,615,100	(1,262,900)	166
Hamburg	755	1,600,300	(748,700)	2,121
Lower Saxony	47,447	7,229,700	(3,469,600)	152
Bremen	404	671,600	(315,200)	1,661
North Rhine-Westphalia	34,061	16,775,000	(8,002,600)	493
Hessen	21,115	5,548,700	(2,664,700)	263
Rhineland-Palatinate	19,848	3,627,800	(1,734,800)	183
Baden-Württemberg	35,751	9,242,800	(4,447,100)	259
Bavaria	70,553	10,965,800	(5,250,900)	155
Saarland	2,571	1,051,600	(499,200)	409
Berlin (West)	480	1,851,800	(848,500)	3,875

Vital statistics for calendar years:

	Marriages	*Live births*	*Of these illegitimate*	*Deaths*	*Divorces*
1982	361,966	621,173	52,750	715,857	118,609
1983	369,628	594,177	52,442	718,337	121,475
1984	364,206	584,157	52,998	696,118	..

Name______________________________ Date________________

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Analysis of Tabular Data: Statesman's Yearbook

A. Examine the "world total" row of data, for the table, "WHEAT."

1. For what year was the most farmland, worldwide, allotted to wheat as a crop? ________

2. What is the pattern in the span of years presented in this table, for farmland allotted to wheat?

   ____

3. List two hypotheses which might explain this pattern.

   ____

   ____

4. Describe some steps you could take to "test" these hypotheses. [Hint: what other kinds of data might "explain" or "verify" these hypotheses?]

   ____

   ____

5. What is the pattern in the span of years presented in this table, for wheat production?

   ____

B. Examine the individual units of data within the table.

1. In which country, and in which single year, was the most land area allotted to wheat as a crop? ____________________

2. What was the weight of wheat production for that country, in that year? ____________________

3. What is the ratio of wheat production per unit of land area, for that country? [hint: weight per unit of land]

   ____

4. What appears to be the best single year for the United States, for wheat production per unit of land area? __________

5. Which country apparently had the best ratio of production per unit of land area, in 1984? ____________________

WHEAT

	Area (1,000 hectares)					Production (1,000 tonnes)				
Countries	*Average 1974-76*	*1980*	*1982*	*1983*	*1984*	*Average 1974-76*	*1980*	*1982*	*1983*	*1984*
Afghanistán	2,326	2,192	2,329	2,350	2,310	2,833	2,750	2,862	2,900	2,850
Algeria	2,240	2,071	1,850*	1,402	1,970	1,523	1,511	980*	790	1,200
Argentina	5,311	5,023	7,320	6,880	6,120*	8,513	7,780	15,130	12,300	13,000*
Australia[1]	8,606	11,283	11,546	12,909	12,214	11,721	10,856	8,879	22,064	18,580
Bulgaria[1],[2]	911	968	1,059	1,128	1,040	3,180	3,847	4,913	3,608	3,600
Canada	9,888	11,098	12,554	13,697	13,158	17,990	19,292	26,790	26,588	21,199
Chile[1]	652	546	374	359	471	936	966	650	586	988
China[1]	27,683	29,231	27,914	29,051	29,468	45,522	55,213	68,422	81,392	87,682
Czechoslovakia[2]	1,240	1,189	1,068	1,190	1,201	4,690	5,386	4,606	5,820	6,170
Egypt[1]	583	557	577	570	550	1,960	1,796	2,017*	1,996	1,815
France	4,099	4,582	4,849	4,826	5,095	16,715	23,683	25,342	24,745	32,884
Germany, Fed. Rep. of[2]	1,611	1,668	1,578	1,655	1,634	7,159	8,156	8,632	8,998	10,223
Greece	924	1,012	1,029	1,008	924	2,216	2,970	2,983	2,043	2,646
Hungary[1,3]	1,300	1,276	1,310	1,355	1,400*	4,709	6,077	5,762	5,985	7,300*
India	19,016	22,172	22,144	23,567	24,395	24,910	31,830	37,452	42,794	45,148
Iran	5,839	5,500	6,060	6,042	5,800	5,438	5,700*	6,500*	5,956	5,500
Iraq	1,513	1,500*	1,168	1,191	650	1,162	1,300	965	841	300
Italy	3,600	3,408	3,327	3,328	3,280	9,607	9,156	8,903	8,514	10,005
Japan[1]	87	191	228	229	232	232	583	742	695	741
Mexico	816	739	1,013	857	1,089	2,983	2,785	4,468	3,460	4,262
Morocco	1,843	1,715	1,686*	1,976	1,856	1,872	1,811	2,183	1,971	1,989
Pakistan[1]	6,012	6,912	7,223	7,398	7,322	7,998	10,805	11,304	12,414	11,053
Poland[1]	1,892	1,609	1,456	1,537	1,706	5,787	4,175	4,476	5,165	6,010
Romania[1]	2,378	2,244	2,155	2,227	2,350	5,530	6,427	6,460	5,205	7,900
S. Africa, Republic of	1,718	1,620*	1,974*	1,809	1,820	1,876	1,470	2,420	1,770	2,150
Spain[2]	2,866	2,699	2,662	2,615	2,267	4,425	6,040	4,410	4,268	6,044
Turkey[2]	9,142	8,915	9,031	9,258	9,026	14,163	16,554	17,542	16,438	17,235
USSR[1]	60,376	61,475	57,278	50,823	51,061	82,340	98,182	87,000	78,500	76,000
UK	1,167	1,441	1,663	1,695	1,939	5,120	8,470	10,320	10,800	14,960
USA	27,760	28,727	31,963	24,843	27,085	54,955	64,619	76,538	65,858	70,638
Yugoslavia[2]	1,727	1,516	1,558	1,609	1,460	5,555	5,091	5,218	5,525	5,596
World total	227,349	236,873	239,530	230,789	231,869	383,370	446,107	486,423	494,690	521,682

* Unofficial figures.

[1] Sown area.

[2] Includes spelt.

[3] Field crops and other crops.

Worldmark Encyclopedia of the Nations. New York: Worldmark Press, Ltd., 1984.

- call number: Ref./910.3/Worldmark [located in general reference shelves].
- a five-volume set, with the following divisions:
  - * vol. 1: United Nations
  - * vol. 2: Africa
  - * vol. 3: Americas
  - * vol. 4: Asia & Oceania
  - * vol. 5: Europe
- an index to the whole set is contained in vol. 1.
- a table of contents for each specific volume is contained at the beginning of each volume.
- follows a standardized organizational pattern, for all countries included in volumes 2, 3, 4, and 5.
- a guide to country articles, contained after the table of contents for volumes 2, 3, 4, and 5, lists the standardized section headings for each article. This guide also includes an explanation of "flag color symbols" and a list of "frequently used abbreviations and acronyms."

Library Media Center
Memorial Boulevard School
MDL: 10/86

WORLDMARK ENCYCLOPEDIA OF THE NATIONS

EUROPE

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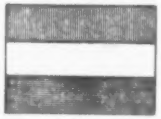
NETHERLANDS

Kingdom of the Netherlands
Koninkrijk der Nederlanden



CAPITALS: Constitutional capital: Amsterdam. Seat of government: The Hague ('s Gravenhage; Den Haag). **FLAG**: The national flag, standardized in 1937, is a tricolor of red, white, and cobalt blue horizontal stripes. **ANTHEM**: *Wilhelmus van Nassouwen (William of Nassau)*. **MONETARY UNIT**: The guilder (gulden, abbreviated f, designating the ancient florin) of 100 cents is a paper currency with one official exchange rate. There are coins of 1, 5, 10, and 25 cents and 1 and 2.5 guilders, and notes of 5, 10, 25, 50, 100 and 1,000 guilders. (f1 = $0.3393 (or $1 = f2.9472) **WEIGHTS AND MEASURES**: The metric system is the legal standard. **HOLIDAYS**: New Year's Day, 1 January; Queen's Birthday, 31 January; Christmas, 25 and 26 December. Movable religious holidays include Good Friday, Holy Saturday, Easter Monday, Ascension, and Whitmonday. **TIME**: 1 PM = noon GMT.

1 LOCATION, SIZE, AND EXTENT

Situated in northwestern Europe, the Netherlands had in 1979 a total area, including estuaries, lakes, and rivers, of 41,160 sq km (15,892 sq mi), of which inland water accounted for more than 4,200 sq km (1,620 sq mi). It extends 312 km (194 mi) N–S and 264 km (164 mi) E–W. The land area increases slightly each year as a result of continuous land reclamation and drainage. The Netherlands is bounded on the E by the Federal Republic of Germany (FRG), on the S by Belgium, and on the W and N by the North Sea, with a total boundary length of 1,605 km (997 mi).

2 TOPOGRAPHY

The country falls into three natural topographical divisions: the dunes, the lowlands or "polders" (low-lying land reclaimed from the sea and from lakes and protected by dikes), and the higher eastern section of the country. About 27% of the land lies below sea level. A long range of sand dunes on the western coast protects the low alluvial land to the east from the high tides of the North Sea, and farther east and southeast are found diluvial sand and gravel soil. The highest point of land, the Vaalserberg, is situated in the extreme south and is 321 m (1,053 ft) above sea level; the lowest point, 6.7 m (22 ft) below sea level, is an area of reclaimed land situated northeast of Rotterdam. The most extensive polder is that of East Flevoland, which has an area of nearly 55,000 hectares (136,000 acres). Many dikes have been constructed along the lower Rhine and Meuse (Maas) rivers, as well as on a portion of the North Sea coast and along nearly the whole of the coast of the former Zuider Zee (formally called the IJsselmeer since its enclosure by a dike in 1932). There are many canals in the country, most of which have numerous locks.

3 CLIMATE

The Netherlands has a maritime climate, with cool summers and mild winters. The average temperature is 2°C (36°F) in January and 19°C (66°F) in July, with an annual average of about 10°C (50°F). Clouds generally appear every day, and in the winter months fog often abounds, while rainfall occurs frequently. Average annual rainfall is about 765 mm (30 in). The mild, damp climate is ideal for dairying and livestock raising, but the limited sunshine restricts the growing of food crops.

4 FLORA AND FAUNA

Plants and animals that thrive in temperate climates are found in the Netherlands. The most common trees are oak, elm, pine, linden, and beech. The country is famous for its flowers, both cultivated varieties (best known among them the Dutch tulip) and wild flowers such as daisies and buttercups, and the purple heather that blooms on the heaths in September. Birds are those characteristic of Western and Central Europe, and large numbers of seagulls swarm over the coastal areas from time to time. Many kinds of fish abound along the North Sea coast and in the lakes and rivers. Wild or large animals are practically nonexistent.

5 ENVIRONMENT

In recent years, as the result of rapid population and economic growth, the government has placed increased emphasis on preservation of the natural environment. One key concern is the pressure put on the countryside, traditionally the domain of the smallholder, by the demands of modern mechanized agriculture and the needs of a large urban population for recreational areas and waste disposal. To help solve this environmental problem, the government has instituted comprehensive land-use planning by means of a system of zoning that indicates the priorities for land use in each zone. In the late 1970s, the government also began to designate scenic and cultural areas as national parks.

In 1971, the Ministry of Health and Environment was established; a countrywide system of air pollution monitoring by the National Institute of Public Health has been in place since 1975. Since the mid-1970s, discharges of heavy metals into industrial wastewater and air pollution from industrial use of fossil fuels have been substantially reduced. Much less progress was recorded between 1970 and 1978 in reducing automotive emissions; an excise tax surcharge on gasoline and diesel fuel was imposed for pollution abatement in 1981. The capacity of municipal wastewater treatment plants increased fivefold from 1960 to 1980.

6 POPULATION

The Netherlands had an estimated population of 14,208,586 as of 1 January 1981, with a density of 384 persons per sq km (996 per sq mi) of land, greater than that of any other West European country. The 1971 census population was 13,045,785; a population of 14,682,000 was projected for 1987. With a crude birthrate in 1980 of 12.8 per 1,000 and a crude death rate of 8.1, the Dutch rate of natural increase was 4.7. In 1981 there were 1,016 females for every 1,000 males; 69.1% of the population was over the age of 19.

About 76% of the population lived in urbanized areas in 1981, but only 26% in municipalities with more than 100,000 inhabitants. Major cities (with 1981 populations) are Amsterdam, 712,294; Rotterdam, 576,330; The Hague, 456,726; Utrecht, 236,211; Eindhoven, 195,669; Groningen, 162,952; Haarlem, 157,556; and Tilburg, 153,114. Some 40% of the population lives in the provinces of Utrecht, North Holland, and South Holland, which combined had a population density of 905 persons per sq km (2,344 per sq mi) in 1979.

Guide to Country Articles

All information contained within a country article is uniformly keyed by means of small superior numerals to the left of the subject headings. A heading such as "Population," for example, carries the same key numeral (6) in every article. Thus, to find information about the population of Algeria, consult the table of contents for the page number where the Algeria article begins and look for section 6 thereunder. Introductory matter for each nation includes coat of arms, capital, flag (descriptions given from hoist to fly or from top to bottom), anthem, monetary unit, weights and measures, holidays, and time zone.

FLAG COLOR SYMBOLS	☐	■	■	▤	▩	▦	□	■
	YELLOW	RED	GREEN	BLUE	ORANGE	BROWN	WHITE	BLACK

SECTION HEADINGS IN NUMERICAL ORDER

1 Location, size, and extent
2 Topography
3 Climate
4 Flora and fauna
5 Environment
6 Population
7 Migration
8 Ethnic groups
9 Languages
10 Religions
11 Transportation
12 History
13 Government
14 Political parties
15 Local government
16 Judicial system
17 Armed forces
18 International cooperation
19 Economy
20 Income
21 Labor
22 Agriculture
23 Animal husbandry
24 Fishing
25 Forestry
26 Mining
27 Energy and power
28 Industry
29 Science and technology
30 Domestic trade
31 Foreign trade
32 Balance of payments
33 Banking and securities
34 Insurance
35 Public finance
36 Taxation
37 Customs and duties
38 Foreign investment
39 Economic development
40 Social development
41 Health
42 Housing
43 Education
44 Libraries and museums
45 Media
46 Organizations
47 Tourism, travel, and recreation
48 Famous persons
49 Dependencies
50 Bibliography

SECTION HEADINGS IN ALPHABETICAL ORDER

Agriculture	22
Animal husbandry	23
Armed forces	17
Balance of payments	32
Banking and securities	33
Bibliography	50
Climate	3
Customs and duties	37
Dependencies	49
Domestic trade	30
Economic development	39
Economy	19
Education	43
Energy and power	27
Environment	5
Ethnic groups	8
Famous persons	48
Fishing	24
Flora and fauna	4
Foreign investment	38
Foreign trade	31
Forestry	25
Government	13
Health	41
History	12
Housing	42
Income	20
Industry	28
Insurance	34
International cooperation	18
Judicial system	16
Labor	21
Languages	9
Libraries and museums	44
Local government	15
Location, size, and extent	1
Media	45
Migration	7
Mining	26
Organizations	46
Political parties	14
Population	6
Public finance	35
Religions	10
Science and technology	29
Social development	40
Taxation	36
Topography	2
Tourism, travel, and recreation	47
Transportation	11

FREQUENTLY USED ABBREVIATIONS AND ACRONYMS

AD—Anno Domini
AM—before noon
b.—born
BC—Before Christ
c.—circa (about)
C—Celsius
cm—centimeter(s)
Co.—company
Corp.—corporation
d.—died
e—evening
E—east
ed.—edition, editor
e.g.—exempli gratia (for example)
est.—estimated
et al.—et alii (and others)
etc.—et cetera (and so on)
F—Fahrenheit
fl.—flourished
ft—foot, feet
ft³—cubic foot, feet
FRG—Federal Republic of Germany
GATT—General Agreement on Tariffs and Trade
GDP—gross domestic product
gm—gram
GMT—Greenwich Mean Time
GNP—gross national product
GRT—gross registered tons
i.e.—id est (that is)
in—inch(es)
kg—kilogram(s)
km—kilometer(s)
kw—kilowatt(s)
kwh—kilowatt-hour(s)
lb—pound(s)
m—meter(s); morning
m³—cubic meter(s)
mi—mile(s)
Mt.—mount
Mw—megawatt(s)
N—north
NA—not available
n.d.—no date
oz—ounce(s)
PM—after noon
r.—reigned
rev. ed.—revised edition
S—south
sq—square
St.—saint
UK—United Kingdom
UN—United Nations
US—United States
USSR—Union of Soviet Socialist Republics
W—west

Nil (or negligible)—
Figures on tables not included in totals and subtotals are usually given in parentheses ( ). A fiscal split year is indicated by a stroke (e.g. 1983/84).
Note that 1 billion = 1,000 million = 10^9.
A dollar sign ($) stands for US$ unless otherwise indicated.
For acronyms of UN agencies and other intergovernmental organizations, as well as other abbreviations used in text, see the *United Nations* volume.

Lesson Plan

for Kindergarten Students

A Learning Encounter: Crocodile and Hen

Wilma Narciso
Library Media Teacher
Region 14 Schools
Bethlehem Elementary
Mitchell School

I. Objective

- A. Behavioral objective
  Kindergarten students will be involved in an activity designed to foster listening skills and comprehension skills using non-fiction material and literature. They will interact by:
    1. Observing: know specific facts
    2. Explaining: interpret (orally generated facts)
    3. Listening: evaluate data
    4. Deciding: judging which conclusions are supported by data
- B. Thinking skills
    1. Problem solving
        - a. identify
        - b. clarify
    2. Inference—distinguish
    3. Divergent thinking—fluency
    4. Evaluation—point of view

II. Disposition/Attitudes

- A. Focus
    1. Non-judgmental atmosphere nurturing -
        - a. brainstorming
        - b. risk-taking
        - c. encouragement with new solutions
    2. Non-threatening atmosphere for individual work
- B. Tap
    1. Freedom to express a variety of knowledge
    2. Time for interaction to problem and group discussion

III. Lesson Plan Core

- A. Immediate purpose of lesson
  The children will examine a study print of a crocodile. By answering questions (printed on back of study print) they will generate multiple ideas and answers as well as gather and analyze data about the crocodile. They will listen to a story about the crocodile and a hen. After listening to the story, the children will compare similarities and differebces, recognize relationships, observe what is relevant, and decide why hen thinks crocodile is her brother.
- B. Student background knowledge (prior knowledge and skills)
  1. General scientific knowledge about commonly known domestic/zoo animals
  2. Listening skills
  3. Recall
  4. Comprehension
- C. Student activities
  1. Observe [study print]
  2. Discuss / Brainstorm [questioning]
  3. Share information orally [answering]
  4. Listen [to story]
  5. Brainstorm [finding conclusions]
- D. Instructional materials
  1. Study print
     - a. oaktag, large color print of a crocodile, a set of questions on a 5"x7" index card
     - b. drymount picture on one side of oaktag
     - c. drymount 5"x7" index card on other side
     - d. laminate
  2. Story book
     - a. Crocodile and Hen, by J. Lexau
- E. Instructional techniques
  1. Demonstrate [study print]
  2. Question
  3. Read [story book]
  4. Discuss
- F. Lesson sequence
  1. Introduction/Greeting the children
     Set climate. If story is read at Easter or in Spring, opening statement should lead to the concept of eggs. If story is read as a science lesson, zoo animals should be the concept highlighted in introduction.

2. Display study print. Hold picture of crocodile in front of children: questions in back of study print face Library Media Teacher.

	Questions	Skills
1.	The color of the crocodile skin is ...	Completing
2.	What kind of skin does the crocodile have?	Naming
3.	The skin under the crocodile's arms, legs, and under the stomach are soft and leathery. Why is this helpful to the crocodile?	Explaining
4.	What kind of food does a crocodile like to eat?	Speculating
5.	How is the crocodile able to eat its favorite things?	Evaluating
6.	What kind of weather does the crocodile enjoy? Hot? Cold?	Selecting
7.	Where does the crocodile live if it is not in a zoo?	Speculating
8.	Is the crocodile a good swimmer?	Explaining
9.	Would you like to have a crocodile for your pet? Why?	Generalizing
10.	Do you have a question you would like to ask the crocodile?	Processing

3. Read storybook which has excellent which has excellent picture clues and repetitious dialog. Engage children as storyhelpers by repeating the crocodile's lament each time it appears in story line.
4. Conclusion or story ends with humorous but scientific question: Why does hen think crocodile is her brotherr? In what way are they alike?

G. Metacognition

1. Promote reflection and thoughtfulness as opposed to impulsivity
2. Require use of recall
3. Probe
4. Encourage children to build on another's thoughts
5. Follow up ideas to promote depth of processing
6. Reconstruct knowledge

7. Analyze process used for answering
    a. Did you hear a clue as the story was read?
    b. Did you see a clue on any of the pages?
    c. Did a classmate say something that helped you decide your answer?
    d. What did you already know about hens?

IV. Transfer

A. Application of these thinking skills
    1. Promote methods to reproduce information.
    2. Promote curiosity and inquisitiveness in fiction and non-fiction materials.
    3. Promote respect in other children's thoughts.
    4. Establish relationships between content of like materials.
    5. Require students to provide evidence when supporting conclusions.

B. Follow up activities
    1. Children develop a study print with a picture and a set of questions about HEN
    2. Make puppets and write simple script based on story. Children reproduce the process via puppet play.
    3. Display story books with similar theme.
    4. Have children list ways in which story may relate to other topics i.e. teeth, nutrition and eating habits, other carniverous creatures, zoo keepers, hens, egg-laying animals, etc.

Lesson Plan for Grade Five

Celebration — Language Arts Activity

Wilma Narciso
Library Media Teacher
Region 14 Schools
Bethlehem Elementary
Mitchell School

I. Objective

- A. Behavioral objective
  - 1. To celebrate School Library Media Month (or other event); designed for approximately 145 students.
  - 2. To foster critical thinking skills.
  - 3. To enhance creative writing skills.
- B. Thinking skills
  - 1. Divergent thinking through brainstorming and sharing.
    - a. Generate ideas
    - b. Categorize ideas
    - c. Build associations of ideas
    - d. Elaborate on an idea
  - 2. Convergent thinking
    - a. Analyze information gathered and define terms shared in depth.
    - b. Synthesize - compose telegram draft
    - c. Evaluate product
- C. Writing skills
  - 1. Produce a written product (individual telegram message)
  - 2. Revise original draft
  - 3. Adhere to professional requirements required by Western Union

II. Disposition/Attitudes

- A. Maintain a non-threatening atmosphere
- B. Foster open-mindedness and interaction

III. Lesson Plan Core

- A. Immediate purpose of lesson
  To celebrate School Library Media Month in an elementary school with a project that provides the students an opportunity to think, to share, and to verbalize orally and in written form, their thoughts and feelings about their school library media center.

B. Student background knowledge (prior knowledge and skills)
   1. Awareness of various means of communication
   2. Familiarity with the services of the library media center through personnal use

C. Student activities
   1. Students are asked to discuss the school library media service, staffing, and facility.
   2. Students are asked to recall previous School Library Media Month activities.
   3. Students will prepare telegram messages.

D. Instructional materials
   1. Call national headquarters of Western Union for information and procedure.
   2. Call a Western Union operator for input on actual procedure

E. Instructional techniques

F. Lesson sequence
   1. Conduct class discussion.
   2. Questioning to determine a basis for the celebration or event and to establish a frame of reference.
      a. What are some of the ways students use the school library media center?
      b. How does the school library media center and public library compare?
      c. Locate the center and identify who provides services.
      d. Valuing—when is a good time to use the school library media center?
      e. Predict why you would recommend to others the use of the school library media center.
   3. Have students draft telegram messages.
      a. How would you write a messsage that reflects your opinion of, your feelings about celelbrating School Library Media Month?
      b. Has anyone received or written a telegram?
      c. What are the requirements of a telegram message? What kind of words should you select? Verbs, nouns, adjectives, adverbs? Why or why not?
   4. Calculate costs of telegram and decide if yours should be revised in any way. Ten words will cost $18.70; every additional word costs $.45. The word "stop" is archaic and costs you.

G. Metacognition

  1. Review how one decides on the choice of words to use in a message of limited length; how to get the most from a word.
  2. Consider whether the additional cost is desirable in order to make the messasge longer.

IV. Transfer

A. Application of these thinking skills
Often one must write within limited space.

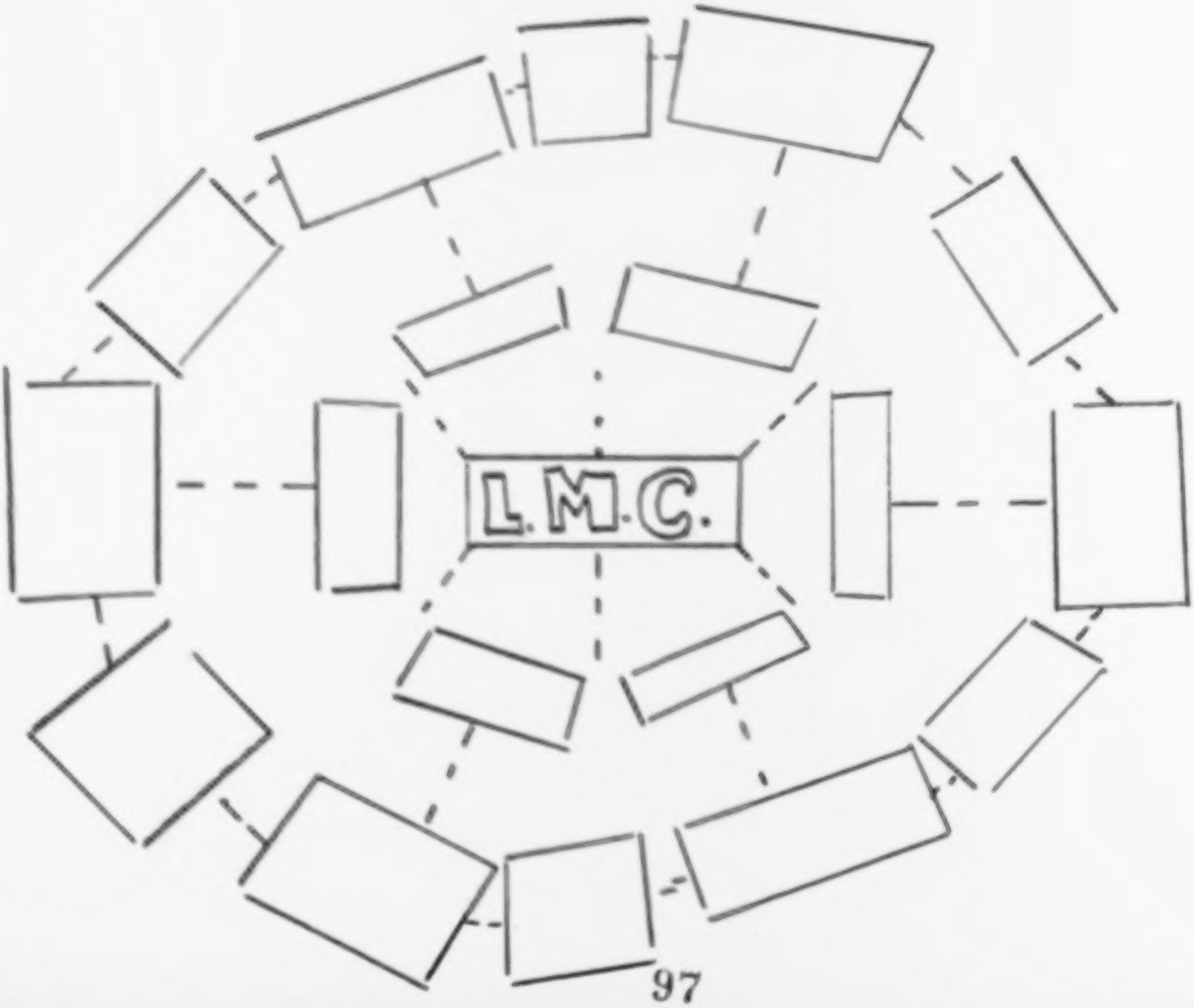
B. Follow up activities
Actual telegrams will be sent as part of the celebration to important people in the school system and State Department of Education. Messages submitted by the students will be selected by the school library media teacher.

Note: The two student worksheets that follow were used with section III F 1 and F 3. The first is a webbing format to aid with discussion, and the second is a telegram facsimile for drafting messages.

NAME:________________________ DATE:____________________

THINKING SKILLS

A spider web is an excellent example of a specific pattern of content and purpose of thinking. In the center of this web is a single thought. Beginning in the center, work out to all the surrounding areas, with describing words about your L.M.C.!



western union Telegram

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DEAR

Lesson Plan for Grade Five

Creating a Database

Wilma Narciso
Library Media Teacher
Region 14 Schools
Bethlehem Elementary
Mitchell School

I. Objectives

To teach the library media term "Periodicals," and to introduce the concept of the computer term "Database."

A. Behavioral objectives
   1. Students will examine periodicals for a specific type of article.
   2. Students will fill out database worksheets regarding articles selected.
   3. Students will learn to use the completed database in their reference work.

B. Thinking skills
   1. Analysis—Does the article fit the requirements?
   2. Selection—Is the article of suitable reading level, interest, text and illustrations for grades using the database?
   3. Evaluation—The word "discernment" was introduced.

II. Disposition/Attitudes

A. Internal locus of control
B. Collaborative learning
C. Non-judgmental atmosphere nurturing -
   1. Interaction
   2. Self-direction
   3. Sharing

III. Lesson Plan Core

A. First lesson:
   1. Introduce periodicals concept.
   2. Indicate that the students are to examine the periodicals for "features" and discuss the characteristics of each.
   3. Assign "Periodicals Worksheet" for recording information found in analyzing a specific periodical.

B. Second lesson:
   1. Introduce periodical indexing problems.
   2. Introduce the computer term "database."
   3. Use the overhead, information is generated that defines the term as an "electronic filing cabinet" or a "computerized index card file (box)".
   4. How do we create a database? Describe the technical procedure for creating a database.
      Select a software program such as PFS File.
   5. Introduce terms such as "template" and "field." The term is relevant to 5th graders who have had programming and a smattering of word processing.
   6. Students will design a database about "holidays" suitable for use with first graders.
      a. Decide what information is needed by the user.
      b. Design the data file.
      c. Create fields as required.
   7. Design the template to be used for the database. See example which follows:

Holiday
[Alternate name]
Periodical name
Volume number
Series number
Date
Title of Article
Author
Page numbers

File created by
Homeroom
Date
Updated

C. Third lesson:
   1. Give students copies of the template worksheet on a ditto, some 3 x 5 cards, and one periodical.
   2. Student creates a draft entry on a 3 x 5 card.
   3. Student transcribes complete information accurately onto the template worksheet or else the entry cannot be used since all entries in the database will be done by an adult using the template worksheets prepared by the students.

D. Metacognition
  1. Promote reflection and thoughtfulness as opposed to impulsivity.
  2. Require use of recall.
  3. Probe.
  4. Encourage children to build on another's thoughts.
  5. Follow up ideas to promote depth of processing.
  6. Reconstruct knowledge.

IV. Transfer

A. Follow up activities centered on use of the Holiday Database. It was explained that when materials cited in the database were lost, the entry would have to be removed.
B. Students demonstrated a new awareness that library media materials did indeed need to be returned and seemed to accept a strengthened personal responsibility for materials.

Periodicals Worksheet

Name:____________________________________ Date:___________

Examine the contents of a periodical. Locate and list the following:

Name of periodical: ______________________________________

Volume: _________ Issue Number: _______ Date: ____________

Does your periodical have any of the following features?

Games _________ Puzzles ____________ Jokes ____________

Poems _________ Photographs _________ Pictures __________

Recipes _______ Stories _____________ Editorials ________

Letters to the Editor ________________

Template Worksheet

Name:______________________________ Date:__________

Select an article about a holiday and list the following information:

Title of article: ______________________________

Author: ______________________________

Name of periodical: ______________________________

Volume: ________ Pages: __________ Date: ______________

Lesson Plan for All Thinkers

An Exercise in Metacognition

Mary Ann Pellerin, Ph.D.
Assistant Professor of Education
Central Connecticut State University

I. Objectives

- A. Behavioral objective
  The students will be able to select a thinking skill strategy new to them, apply it to a given situation and evaluate its outcome according to stated criteria.
- B. Thinking skills
  Critical thinking skills focused on:
  1. Problem solving
  2. Divergent thinking
  3. Reasoning
  4. Making inferences

II. Disposition/Attitudes

- A. Internal locus of control
- B. Collaborative learning

III. Lesson Plan Core

- A. Immediate purpose of lesson
  1. To teach students to recognize their own and others' beliefs about thinking.
  2. To help them tune in on assigned tasks and to perceive what it is they are being asked to do.
  3. To help them develop new critical thinking strategies for problem solving.
- B. Student background knowledge (prior knowledge and skills)
  1. Oral and written communication skills
  2. Reading skills (not essential, but helpful)
- C. Student activities
  1. Brainstorm to discover strategies for metacognition.
  2. Categorize strategies into appropriate groups.
  3. Discuss findings and rate these ideas according to order of applied use, and self-perceived value for each student.
  4. Brainstorm criteria for evaluating outcomes.

  5. Hypothesize situations in which the various strategies might work.
  6. Select a new strategy and test it in a given situation.
  7. Evaluate the outcome to discover how well the strategy worked (or didn't work).
- D. Instructional materials

  A specific situation will be devised in which the new strategy will be tested, and materials will be chosen to fit the situation.
- E. Instructional techniques
  1. Large group discussion
  2. Brainstorming in large and small groups
  3. Individual conferencing
- F. Lesson sequence
  1. Brainstorming to set the purpose: Students cite examples which are written on 3 x 5 Scotch "Post-it" Note Pad sheets and adhered to the chalkboard.
  2. Analysis of gathered data:
     - a. What are the relationships among these various categories?
     - b. Categorize the strategies into appropriate groups.
  3. Discuss findings and ratings: Students rate categories according to applied use and self-perceived value,
  4. Brainstorm criteria for evaluating outcomes.
  5. Hypothesize situations in which the various strategies might work.
  6. Students select a new strategy and test it in a given situation.
  7. Students evaluate the outcome to discover how well the strategy worked.
- G. Metacognition
  1. Recognizing one's own and others' beliefs about thinking.
  2. Tuning in on assigned tasks and perceivng what it is that one is being asked to do.
  3. Developing new critical thinking strategies for problem solving.

IV. Transfer

- A. Application of these thinking skills

  Since this is a lesson about and using metacognition, it is hoped that students become more aware of these skills and apply them to any situation or class.

B. Follow up activities
  1. Have students keep a journal record of their own critical thinking strategies and an evaluative diary of their experiences in using them.
  2. Through discussions and evaluative sessions in other lessons, follow up with a discussion of new entries in their journal and how they relate to that subject area or topic.
  3. Create a chart based on the earlier exercises and post it in the room for ready reference.
  4. Update evaluative ratings and revise findings as more data evolves.

Lesson Plan for Grade Seven

Newspaper—Biography Report

Laura R. Roberts
Classroom Teacher
Danbury

This project is a month long assignment by which students in a seventh grade, level one class will have opportunities to work in pairs as well as groups on their projects. The grouping will be based on individual interest in topics. One final project will be completed by each group of students

I. Overall Objectives

- A. Behavioral objective
  This is an interdisciplinary project using skills in reading, writing, social studies, and library skills. Students will write a biographical sketch of a famous person, author, or actor by using a newspaper format. Within this newspaper the students will:
  1. Write an interview
  2. Answer report on two related articles
     - a. Sports article
     - b. Comic strip or editorial cartoon
     - c. Movie review
     - d. Weather map
     - e. Four advertisements
- B. Thinking skills
  1. Problem solving
     - a. Formulate appropriate questions
     - b. Generate related ideas
     - c. Choose best solution
     - d. Apply the solution
  2. Decision making
     - a. Identify the alternatives
     - b. Choose the best alternative
  3. Inferences
     - a. Inferencing
     - b. Analyze open-ended problems
     - c. Making further inferences
     - d. Determining relevant information
  4. Deductive skills
     - a. Spotting contradictory statements
     - b. Understanding and applying spatial relationships

5. Divergent thinking
    a. Generating multiple ideas
    b. Generating different ideas from multiple viewpoints
    c. Generating unique ideas
    d. Generating detailed iodeas
    e. Synthesizing information
6. Reasoning skills
    a. Observing and judging observation reports
    b. Detecting cliches
    c. Recognizing loaded language
    d. Classifying data
    e. Predicting consequences
    f. Recognizing inconsistencies in information
    g. Using dialogical approaches
    h. Recognizing different points of view
    i. Predicting outcomes from data
    j. Developing and applying observation skills
    k. Defining and clarifying terms using metacognition

II. Disposition/Attitudes

Challenging activities and materials are provided and thinking is stimulated. Students are allowed to take risks; ideas are valued. They are interacting and communicating to complete the assigned task. Self-direction and independence are encouraged.

Lesson One: "Introduction to Newspaper Format and Selection of Persons for Biographical Newspaper Reports"

III. Lesson Plan Core

A. Immediate purpose of lessons
Students will:
    1. Receive an introduction to the assignment's requirements
    2. Identify, define and label the basic components of the newspaper.
    3. Select a famous person, author or actor for creating their newspaper format biography

B. Student background knowledge (prior knowledge and skills)
The students will have background knowledge of
    1. Guidelines for formal written work
    2. Composition checklist
    3. Bibliographical format

4. Methods and procedures of outlining and summarizing
5. Project writing checklist
6. What a biography is

C. Student activities
Students will:
   1. Discuss the parts of a newspaper
   2. Label the components of a newspaper
   3. Select a famous person for their newspaper format biography

D. Instructional materials
   1. Instructional worksheet: "What is On the Front Page of the Newspaper?"
   2. Overhead projector
   3. List of selected authors, actors and famous people
   4. Variety of examples of newspaper front pages

E. Instructional techniques
Class discussion, followed by pairing of students for team study purposes

F. Lessons sequence
   1. Introduce newspaper format to the class
      a. Question students about the labels for each part of the paper
         1) Why does it have this name?
         2) Make an analogy using the name
         3) How do the various newspaper formats differ?
         4) Why do you think these decisions were made?
   2. Introduce various newspaper editions to the class. These will be presented and placed on the board.
   3. Students will then distinguish and state the basic components of the visual materials with previously labeled newspaper
   4. Introduce the class assignment, requirements, methods, materials needed
      a. Hand out list of authors, actors and famous people
      b. Students will select a person of their choice and interest
      c. Students will be paired by approval of the teacher

G. Metacognition
   1. How did you identify the different components of the paper?
   2. What similarities and differences did you find?
   3. How did you select your person?
   4. What choices did you have to make?

IV. Transfer

A. Application of these thinking skills
Analysis of the newspaper format skills can be applied to analyzing the format of periodicals.

B. Follow up activities
Lesson two introduces the students to primary and secondary sources that will be found in the library media center.

Lesson Two: "Introduction to Primary and Secondary Sources"

III. Lesson Plan Core

A. Immediate purpose of lesson
Media will present primary and secondary sources available to students in the media center.

B. Student background knowledge (prior knowledge and skills)
   1. Notetaking skills
   2. Comparing and contrasting skills
   3. Reading
   4. Brainstorming

C. Student activities
Students will take notes on the topics presented. Notes will be saved for an exam on this unit.

D. Instructional materials
Media provided

E. Instructional techniques
   1. Brainstorming
   2. Discussion
   3. Lecture

F. Lesson sequence (media discussion)
   1. Brainstorm for sources of materials for a biographical sketch.
   2. Discuss how the sources are used.
   3. Lecture as needed to further students' understanding about primary and secondary sources.

G. Metacognition
   1. How would you go about searching for information?
   2. What other sources would you use besides the card catalog?
   3. What problems might you run into?
   4. How would you go about selecting a topic person?

IV. Transfer

- A. Application of these thinking skills
  Reasoning skills of comparison and contrast may be applied to all curriculum areas.
- B. Follow up activities
  As a follow up to this lesson, the students will go to the library media center to look for primary and secondary sources.

Lesson Three: "Library Media Center Research"

III. Lesson Plan Core

- A. Immediate purpose of lesson
  Students will choose source materials related to the person chosen for their topic of study.
- B. Student background knowledge (prior knowledge and skills)
  1. Library skills
  2. Analyzing and organizing sources
  3. Interviewing techniques
- C. Student activities
  Students will:
  1. Spend twenty-five minutes of class time in the library media center choosing source materials.
  2. Begin reading sources, thinking of questions they would ask in an interview with their person.
- D. Instructional materials
  1. Library media center resources
  2. Assistance, when needed of the library media teacher
- E. Instructional techniques
  1. Discussion
  2. Questioning
  3. Review of Lesson Two: Library Media Resources
- F. Lesson sequence
  1. Questioning period of ten minutes
     - a. Define a biography.
     - b. Compare and contrast biographies with autobiographies.
     - c. Brainstorming class: What are the sources available in searching for a biography?
     - d. What type of questions would you ask if you were interviewing your person?
  2. Summarize procedures for looking up information in the various resources.

    3. Students will locate the biographical information needed.
  G. Metacognition
    1. How did you go about getting information on your topic?
    2. What problems did you run into?
    3. Once you found your information, what did you do?
    4. What will you do next?

IV. Transfer

  A. Application of these thinking skills
  Open-ended problems are present in everyday situations. Students must learn how to evaluate a situation and then present a solution to their problem. In following the lesson they will be introduced to the necessary techniques.
  B. Follow up activities
    1. Home work: Students will read for background information on the person selected.
    2. Supply time for reading and thinking about the person for a few days before going on.

Lesson Four: "Role Playing An Interview and Writing the Newspaper Format Biography"

III. Lesson Plan Core

  A. Immediate purpose of lesson
  Students will design questions and supply answers that will result in the completion of information identifying the person's:
    1. Childhood
    2. Youth
    3. Adult life
    4. Contributions made
    5. Why this person is famous
    6. Who affected his/her life the most
    7. Those significant changes (if any) in his/her life
  B. Student background knowledge (prior knowledge and skills)
    1. Understanding of the 5 W's: Who?, What?, When?, Where?, Why?
    2. Knowledge of preread materials
    3. Ability to classify information
    4. Oral communication ability
    5. Synthesizing information
    6. Comparing similarities and differences

C. Student activities
Students will:
  1. Role play - each student will interview one of his/her classmates by formulating questions
  2. Brainstorm and categorize information from the interview under each of the 5 W's
  3. Present the information learned from the interviews to the class

D. Instructional materials
Blackboard labeled with the 5 W's in columns

E. Instructional techniques
  1. Assigning students in pairs for interviewing
  2. Lecture on procedures for role playing

F. Lesson sequence
  1. Explain procedure for class period:
     a. Interview
     b. Class presentation
     c. Notetaking
     d. Independent time for developing questions
  2. Each student is assigned to interview a person they do not know. The partners have five minutes to tell things that they would like others to know about their person's lives, hobbies, goals, influential people.
     The partner is to be listening for the answers to the 5 W's.
  3. After interview time allotted, players stand and "proudly present" their partner to the group.
  4. The class will then be asked to summarize the information under each appropriate column.
  5. If a particular column has not been filled, the partner must formulate a question to supply the answer needed.

G. Metacognition
  1. How did you go about deciding on the questions?
  2. What problems did you encounter while you were deciding of the questions?
  3. How did you go about finding the information about your partner?
  4. You changed some answers. Why did you do this?

IV. Transfer

A. Application of these thinking skills
Students are informed in developing and answering the 5 W's questions. They will be able to use this format for:
   1. Writing reports
   2. Writing paragraphs
   3. Letters of introduction
   4. Developing speeches
   5. Other aspects of the curriculum.

B. Follow up activities
The students will:
   1. Categorize information on their person under the headings of the 5 W's.
   2. Write their interview questions and answers about their selected person.
   3. Reorganize this information into a typical column for a newspaper.

Lesson Plan

for Upper Elementary Gifted Program

Wordplay

Annea Schreiber Rosenberg
LEAT Classroom Teacher
Ridgefield Elementary Schools

I. Objectives

Students will demonstrate an enjoyment of word play after being introduced to the fact that language is something that has evolved through a process similar to Darwin's theory of survival of the fittest. They will come to realize through class discussions and individual reading that we, as a group, shape the course of language by placing a personal judgment on words and selecting some and avoiding others.

A. Behavioral objective
Given lists of vocabulary that are no longer in use today, students will create short literary pieces.

B. Thinking skills
1. Formulating solutions
2. Choosing the best solution
3. Generating ideas
4. Applying the solution
5. Evaluating
6. Using insight
7. Generating ideas to support points of view

II. Disposition/Attitudes

Risk-taking and a sense of humor will be encouraged.

III. Lesson Plan Core

A. Immediate purpose of lesson
Students will analyze pieces of writing which incorporate unfamiliar words and attempt to interpret the meaning of the work.

B. Student background knowledge (prior knowledge and skills)

C. Student activities
    1. Reading
    2. Listing
    3. Brainstorming
    4. Sharing
    5. Explaining

D. Instructional materials
    1. Poplollies and Bellibones: A Celebration of Lost Words, by Susan K. Sperling
    2. A Hog on Ice, by Charles Funk
    3. Oxford Dictionary of Current Idiomatic English, A. P. Cowled
    4. I Hear America Talking, Stuart Flexner
    5. Picturesque Expressions, L. Urdang and N. LaRoche
    6. Horsefeathers and Other Curious Words, Charles Funk
    7. The Book of Jargon, Don Miller

E. Instructional techniques
    1. The teacher will present a short lesson on etymology.
    2. The library media teacher will introduce the students to a variety of reference materials in this area and instruct them in the use of each.

F. Lesson sequence
    1. Students will read "About the Author" in Poplollies and Bellibones.
    2. Working in small groups they will attempt to interpret unfamiliar words which are no longer used, to glean the meaning of the paragraph.
    3. They will then be encouraged by the teacher to differentiate between the colorfulness of past words with the more efficient language of today.
    4. Students will read pp. 33-37, "Young Tenders Meet the Eerie Spirit" in Poplollies and Bellibones.
    5. They will work individually to interpret the tale and then gather in small groups to share ideas and form a concensus
    6. The teacher will then share with the students the translation provided by the author. This will be done to promote enjoyment rather than to instill fear of being incorrect.
    7. Students will be provided with a list of "antique" words and definitions. Each student will work individually to create a piece of humorous writing, using words from the list. Final products will be shared orally with the whole class.

8. Working in small groups, students will brainstorm lists of original words to define modern ideas; i.e., "totcluster" —group of nursery school children, "moneypeak"—making the most money in a particular field. Each group will share its list and explain the derivation of each term.

G. Metacognition
Throughout the lesson students will be asked to explain the reasoning they used to formulate their conclusions. Class members will be encouraged to question and debate their reasoning.

IV. Transfer

An enjoyment of wordplay will hopefully be an outgrowth of these activities. Students will utilize the skills incorporated in every activity to follow whether it be a scientific hypothesis that they are trying to prove or a comparison of a past historical event with a recent happening. Becoming a risk taker, using creative thinking and attempting to solve problems in logical ways will hopefully become a classroom "way of life."

Lesson Plan

for Upper Elementary Gifted Program

Interpreting and Evaluating What We See and Read

Annea Schrieber Rosenberg
LEAT Classroom Teacher
Ridgefield Elementary Schools

The following lesson is merely a part of a comprehensive unit on the media and communication. One of the major goals of this unit is to teach the students to think critically. They will learn not to take what they see on television or read in the print media at face value; they will become familiar with techniques useful for interpreting and evaluating what they see and read.

I. Objectives

A. Behavioral objective
  1. Students will give examples of the effect word choice has on the receiver of a message.
  2. Students will understand the meaning of the terms "dennotative" and "connotative" and learn to differentiate between the two.

B. Thinking skills
  1. Reasoning skills
  2. Decision making skills
  3. Inference skills (See Gubbins' listing)
  4. Brainstorming
  5. Defining
  6. Application
  7. Drawing conclusions
  8. Comparing
  9. Clarifying
  10. Evaluating

II. Disposition/Attitudes

An atmosphere of risk-taking, creativity and sharing will be encouraged.

III. Lesson Plan Core

- A. Immediate purpose of lesson
- B. Student background knowledge (prior knowledge and skills)
- C. Student activities
- D. Instructional materials
- E. Instructional techniques
- F. Lesson sequence
  1. Students will define 'dennotative' and "connotative". They will then brainstorm a list of words that have specific connotations.
  2. As a group, students will choose words from the list and give examples of a positive and a negative use of each, examples:
     - a. "You're yellow!"
     - b. "The yellowed book showed its age."
     - c. "The yellow sunset was beautiful to behold.
  3. Students will examine menus from a variety of restaurants: specialty, gourmet and fast food. As a group they will discuss and list on the board similarities and differences among them.
  4. The teacher will guide the discussion with such questions as:
     - a. Why would someone pay $6.95 for a burger in one place, while they would not pay more that 95 cents at another?
  5. Responses, discussing word choice and menu format will be elicited.
  6. Students will discuss and write positive and negative examples of objects for situations written in both positive and negative ways.
     - a. grass - a luscious green golf course
     - b. spindly green and brown minute stalks sticking up from the dirt
  7. Students will share their examples orally.
  8. Students will work in small groups to create three versions of a menu:
     - a. positive terms
     - b. negative terms
     - c. everyday language
  9. Main dishes, side dishes, drinks and desserts will be included.

10. Each group will then share its positively and negatively worded menus with their classmates who will in turn attempt to decipher them into everyday language.

G. Metacognition

Throughout the activities students will be encouraged to share their thinking which lead to the development of their responses. Creative use of language will obviously be encouraged.

IV. Transfer

A. Application of these thinking skill
B. Follow up activities

Lesson Plan

for Upper Elementary Gifted Program

How Choice or Elimination of Words Can Change Meaning

Annea Schrieber Rosenberg
LEAT Classroom Teacher
Ridgefield Elementary Schools

This is another in a series of lessons which form part of a comprehensive unit on the media and communication. One of the major goals of this unit is to teach the students to think critically. They will learn not to take what they see on television or read in the print media at face value; they will become familiar with techniques useful for interpreting and evaluating what they see and read.

I. Objectives

- A. Behavioral objective
  Students will read and then create examples of situations in which word choice and elimination of facts change the meaning of the situation.
- B. Thinking skills
  1. Distinguishing between fact and opinion
  2. Judging credibility of a source
  3. Recognizing assumptions
  4. Detecting bias
  5. Recognizing inconsistencies
  6. Generating ideas to support differing points of view
  7. Making inferences
  8. Determining relevant information
  9. Spotting contradictory statements
  10. Generating unique ideas

II. Disposition/Attitudes

An atmosphere of risk-taking, creativity and sharing will be encouraged.

III. Lesson Plan Core

- A. Immediate purpose of lesson
- B. Student background knowledge (prior knowledge and skills)
- C. Student activities
- D. Instructional materials
- E. Instructional techniques

F. Lesson sequence

1. The lesson will begin with a question posed by the teacher. "Have you ever gone home with two graded papers, one with an "A" and one with a "D" and said to your parents, 'Hey, guess what? I got an "A" on my history test. Bye, I'm going to soccer practice.'"
2. Discussion on what has just occurred will ensue with the students hopefully realizing that they controlled the situation by eliminating some of the facts. Students will be asked to contribute additional examples.
3. Students, having been introduced to appropriate reference materials by the library media teacher, will select an historic character or event and attempt to change our opinion of it by juggling and/or omitting specific facts.
4. The teacher will provide examples:
    a. Think of the painting of "Washington Crossing the Delaware". He was standing in the middle of the boat.
        1) Have you ever been in a row boat?
        2) Would you stand up in it?
        3) Would you want someone this "ridiculous" to be president of your country?
        4) What distortions are caused through the artist's use of symbolism?
    b. Take Ben Franklin. He stood outside in a lightning storm with a kite and a metal key.
        1) Considering what you know about lightning, would you do that?
        2) How could we consider him an "intelligent" man? (He was working with an unknown.)
        3) How is it possible that he escaped death? (What has been omitted from the account?)
    c. Students will then share their "stories" with the class. Peers will evaluate each in terms of the criteria given.
        1) Was the situation changed merely in reorganizing or deleting specific events?

        d. Each student will be asked to describe step by step how he/she changed the hero/heroine or event.

    G. Metacognition

    Throughout the activities students will be encouraged to share their thinking which lead to the development of their responses. Creative use of language will obviously be encouraged.

IV. Transfer

- A. Application of these thinking skills
- B. Follow up activities
    1. A study of the newspaper
        - a. Types of articles
        - b. Definition of news and fact versus opinion
    2. After analyzing various types of articles, students will write their own and create a classroom newspaper using the computer program, Newsroom.
    3. Students will also investigate the field of advertising.
    4. After being introduced to a number of techniques used by advertisers to attract our attention, students will analyze television and magazine ads and then create their own.
    5. When an investigation of the newspaper begins, students will use these skills to evaluate what they read more carefully.

Lesson Plan for Grade Five

Creative Writing: Based on use of Shel Silverstein's The Giving Tree

Susan Sinclair, Student Teacher
With Mary Ann Pellerin, Ph.D.
Central Connecticut State University

A series of lessons to be taught by phases to help under-achievers gain self-confidence in expressing their own feelings and to gain an appreciation of one another's ideas.

I. Objectives

- A. Behavioral objective
  Given a variety of thinking skill experiences, the students will be able to expand their own creative thought and put their own ideas and feelings into expressions free-form, haiku, and cinquain poetry.
- B. Thinking skills
  - 1. Problem solving
    - a. Formulating hypotheses
    - b. Generating related ideas
    - c. Drawing conclusions
  - 2. Making inferences
    - a. Analyzing open-ended problems
    - b. Reasoning by analogy
    - c. Determining relevant information
    - d. Using insight
    - e. Using logic
  - 3. Divergent thinking skills
    - a. Generating multiple ideas (fluency)
    - b. Generating different ideas from multiple viewpoints (flexibility)
    - c. Generating unique ideas (originality)
    - d. Generating detailed ideas (elaboration)
    - e. Synthesizing information
  - 4. Reasoning skills
    - a. Evaluating hypotheses
    - b. Predicting consequences
    - c. Determining an organizational pattern
    - d. Identifying stated and unstated reasons
    - e. Evaluating arguments
    - f. Recognizing different points of view

    g. Defining and clarifying terms
    h. Using metacognition

II. Disposition/Attitudes

Create an atmosphere that:

1. Encourages creativity by acceptance and affirmation
2. Fosters higher cognitive levels of functioning
3. Encourages divergent thinking
4. Builds self-esteem
5. Provides non-judgmental acceptance of ideas
6. Fosters the uniqueness of the individual

III. Lesson Plan Core

A. Immediate purpose of lesson
The students will demonstrate a progressively higher ability in the areas of cognitive and affective functioning.

B. Student background knowledge (prior knowledge and skills)
   1. Ability to write paragraphs
   2. Categorizing ideas
   3. Synthesizing ideas
   4. Brainstorming techniques

C. Student activities
   1. Listening to The Giving Tree
   2. Brainstorming ideas
   3. Writing free-form poetry
   4. Writing Haiku poetry
   5. Writing Cinquain poetry

D. Instructional materials
   1. The Giving Tree, by Shel Silverstein, 1964
   2. Filmstrip introducing Haiku poetry
      Note: Choose a filmstrip that has pictorial illustrations of poetry examples.
   3. Roget's Thesaurus
   4. Dictionary of Synonyms and Antonyms
   5. Hexagamnes for Language Arts, Mary Ann Pellerin, 1972

E. Instructional techniques
   1. Brainstorming
   2. Lecture
   3. Media utilization
   4. Individualized instruction
   5. Demonstration by a guest artist

F. Lesson sequence

Phase One

1. Read The Giving Tree, by Shel Silverstein, 1964
2. Brainstorm and discuss ideas about the give-receive duality theme in The Giving Tree
    a. Elicit students' ideas regarding gifts they would like to receive - examples:
        1) Skate board
        2) VCR
        3) All the money in the world
    b. Elicit responses that address greater needs - examples:
        1) If you have a VCR but have no one to talk to about the movie you are watching . . .
        2) If you had all the money in the world but were confined to a hospital bed . . .
3. Give the students the assignment to write free-form poetry of meaningful gifts and what they would like to receive. Leave them with the thought (to address in their paper) what makes us feel good - getting or giving something.
4. Start a bulletin board display of the students writings. The students could construct a tree to represent The Giving Tree to accompany this display.

Phase Two

1. Show filmstrip introducing Haiku poetry.
2. Pass out the "Haiku Worksheet", P-36 in Hexagames) for children to write out their own Haiku poetry.
3. Elicit from the students correct syllable form of Haiku
4. Introduce Roget's Thesaurus and the Dictionary of Synonyms and Antonyms as resource guides.
5. Assign the students to transform their free-form poetry into Haiku.
6. Add the final results to the bulletin board begun earlier.

Phase Three

1. Invite a guest artist to visit the class and to illustrate a scene from The Giving Tree.

2. Arrange students' seats to that the class can observe the artist's work and talk with the artist.
   a. Have the artist preview the book and begin the artwork prior to the class presentation.
   b. Brainstorm with the class - talk about art techniques to set the mood and to explore conditions for creative behavior.
3. As the artist's own conceptions are illustrated, the children may interact by asking questions about:
   a. The process of creating the artwork
   b. The artist's background as a person and as a particular artist
4. Encourage the students to make suggestions and comments as the artwork is being created
5. Evoke expressions of feeling from the artist
6. Elicit students' feelings concerning the artist's techniques, and toward the subject of the artwork.
7. Elicit from the students decsriptive words about the artwork and the process the artist uses to complete it.
8. List these words on the board or newsprint to be saved for the next lesson phase.

Phase Four

1. Pass out the cinquain worksheet, (P51 in Hexagames).
2. Discuss correct form for cinquain as shown by the examples.
3. Brainstorm further descriptive words and add them to the list begun in Phase Three. Create three categories:
   1) The artist's process
   2) The boy in The Giving Tree at any stage
   3) The tree in The Giving Tree at any stage
4. Assign the students to write their own cinquain poetry which is related to the brainstorming and categories established above.

G. Metacognition
    1. The students will organize and synthesize ideas by piggybacking off of each others' responses and questioning through their brainstorming sessions.
    2. The students will express their own thinking and observations in ways similar or contrary to this: "Painting may seem like an easy task, but it takes time and practice."

IV. Transfer

A. Application of these thinking skills
    1. Confidence in their own judgment, as well as their own unique approach to problem solving can be applied to other school subjects.
    2. The students' own thought processes may lead them to make statements relative to their own study habits, and toward such extra-curricular activities as learning to play a musical instrument or riding a bicycle.

B. Follow up activities
    1. Brainstorm ideas for and write a thank-you note to the guest artist.
    2. Go on to other forms of poetry writing such as diamante, or acrostic poetry.
    3. Other guests may be invited to share their insights and work.
    4. Students should be encouraged to read biographical and autobiographical works to discover other artists' and writers' processes and feelings.

Lesson Plan for Grade One

Writing Descriptive Sentences

Noel Sisson
Classroom Teacher
North Mianus School
Greenwich

I. Objectives

- A. Behavioral objective
  The student will
  - 1. Write at least three related sentences.
  - 2. Use appropriate end punctuation.
- B. Thinking skills—Analysis
  - 1. Discriminate between events in terms of importance.
  - 2. Sequence events chronologically.

II. Disposition/Attitudes

III. Lesson Plan Core

- A. Immediate purpose of lesson
  The purpose is to have children record in three sentences some of the things they did or saw on a tour of the upper open space.
- B. Student background knowledge (prior knowledge and skills)
  Ability to:
  - 1. Develop oral sentences
  - 2. Talk about directed topics
  - 3. Write a proper sentence
  - 4. Copy words
- C. Student activities
  - 1. Describe parts of the school in non-recorded, oral discussion
  - 2. Tour open space area
  - 3. Return to classroom
  - 4. Brainstorm, record, and write
- D. Instructional materials
  Writing materials.
- E. Instructional techniques
  - 1. Discussion
  - 2. Observation
  - 3. Copying
  - 4. Writing

F. Lesson sequence
  1. Introduction
     Discuss parts of the school of which students are aware. Use location words: lower, upper, outside, inside, etc. Have children describe areas in detail. If possible, focus on one area at a time; i.e., describe gym, cafe, entry, library, etc. Keep discussions short.
  2. Direct discussion to upper open space. Again have children locate and describe what they already know about it.
  3. Explain that class will tour space area. Discuss what to look for (bulletin boards, desks). Teacher will have taken pre-tour.
  4. Take tour of space area.
  5. Return to classroom.
  6. Brainstorm for details. List keywords and phrases on board. Discuss and star important events. Number them in order stressing sequence.
  7. Develop oral sentences as a group. Have individual children develop oral sentences.
  8. Develop title and write it on board.
  9. Give the assignment:
     a. Copy the title at the top of your paper and write three sentences to describe what you saw on our trip to the open space area.
     b. You may also draw a picture if you wish.
  10. While the children write, give help as needed.
  11. Have children read stories to each other, to class.
  12. Post stories in open space area.

G. Metacognition

IV. Transfer

A. Application of these thinking skills
B. Follow up activities

Lesson Plan for Grade One

In Search of Colorful Words

Noel Sisson
Classroom Teacher
North Mianus School
Greenwich

I. Objectives

A. Behavioral objectives
The students will:
1. Enjoy colorful and descriptive language.
2. Develop sentences orally to explain or describe.
3. Talk about a directed topic using several sentences.

B. Thinking skills (Recall, comprehension)
1. Children will label terms as colorful or non-colorful.
2. Childlren will use oral sentences to describe a pre-selected object.

III. Lesson Plan Core

A. Immediate purpose of lesson
Children will be given a pre-determined object and be asked to describe it using colorful language, and tell how it is used. They will also help to describe one object presented by another student.

B. Student background knowledge (prior knowledge and skills)
Very little background knowledge is needed.

C. Student activities
After a brief teacher introduction (oral), students will do oral presentations.

D. Instructional materials
Large collection of objects collected in a "Treasure Chest" (small toys, rings, etc.).

E. Instructional techniques
Children will do brief oral presentations in which use of full sentences will be stressed.

F. Lesson sequence
1. Introduce concept of "colorful" and "descriptive" by reviewing a recent playground activity.

2. Write "colorful" on board and list words that students generate which are "colorful" (or all words could be listed with "colorful" ones later noted). Sample words are: soft, big, pretty, old, etc.
3. Students will select an item and model a brief oral presentation individually and then as a group.
    a. Teacher will select the first student to study an object in private to determine colorful words which describe that item.
    b. Then the student presents an oral description to the class. The student may show the item being talked about because this is not a guess-the-item game.
    c. As words are given they are listed on the board.
    d. Teacher helps students relate the words describing one object to another.
       For example, "What was the object we described as "big," "red," and "hairy?"
    e. When one child is finished, the next child presents.
    f. Continue this cycle: one presents and one studies for predetermined number of students.
4. To close the lesson, the teacher and students could relate the words on the board to other classroom objects, again stressing that the student should respond in full sentences.
5. The lesson can be continued over three to four days.

IV. Transfer

Skills will be applied to future oral lessons and followed up at learning centers that will be developed around content material.

Lesson Plan for Grade Four

A Basal Reading Experience

Janice Smith
Classroom Teacher
Daniels Farm School
Trumbull

I. Objective

- A. Behavioral objective
  The students will read a folktale, discuss it in a small group setting and complete a written assignment based on this experience.
- B. Thinking skills
  1. Discuss the story plot. [knowledge and comprehension]
  2. Record examples of dialogue demonstrating the characters' moods. [application]
  3. Analyze character roles [analysis]
  4. Create a map of an imaginary land. [synthesis}
  5. Predict the consequences of a character's behavior.

II. Lesson Plan Core

- A. Immediate purpose of lesson
  The purpose of the lesson is to incorporate the higher level thinking skills into the written assignment of a low-ability reading group.
- B. Student background knowledge (prior knowledge and skills)
  The students will have had prior experience with:
  1. Answering questions in complete sentences.
  2. Giving details, examples, reason.
- C. Student activities
  Students will read and discuss the story and prepare written answers to questions.
- D. Instructional materials
  The material used will be a Vietnamese folktale entitled, "The Princess and the Admiral", from the basal reader, New Frontiers, by Harcourt Brace.
- E. Instructional techniques
  The instructional techniques will include oral reading and discussion.

F. Lesson sequence
  1. Day 1
    a. Read pp. 100-105 together in group.
    b. Discuss:
      1) Underlined vocabulary words
      2) Character description
      3) Student predictions of how the Princess will solve the problem
  2. Day 2
    a. Read conclusion of the story together.
    b. Discuss:
      1) Vocabulary
      2) Places where a character is:
        a) Frightened
        b) Worried
      3) Give map directions
  3. Day 3
    a. Students will reread the story independently.
    b. Written questions will be distributed to the group. Further directions and suggestions will be given and questions answered as needed.
    c. The written assignment is:
      1) Record the exact words of a character in the story that show that he or she is:
        a) Happy
        b) Sad
        c) Angry
        d) Funny
      2) Identify what each character or group did to help prevent an attack by the admiral's man.
        a) Farmers
        b) Fisherfolk
        c) Astrologer
        d) Council of Three Advisors
        e) Princess
      3) Create a map showing the Admiral's journey to the Tiny Kingdom by sea and return by land. Add any geographical information you need such as name of town, river, mountains, etc.

        4) What do you think the Emperor will say or do to the Admiral when he returns home?

IV. Transfer

A. Application of these thinking skills
Plans to restructure other basal lessons in order to improve critical thinking skills.

B. Follow up activities
Hold meetings to share student responses to the written assignments as well as to relate the ideas to life experiences and familiar literature.

CRITICAL THINKING WORKSHOP

LESSON PLAN
on
THE USE OF THE READERS' GUIDE TO PERIODICAL LITERATURE

Sally Southard
Library-Media Specialist
Middlesex Middle School
Darien, CT
March 7, 1987

LESSON PLAN FOR 8TH GRADE LIBRARY ASSIGNMENT

Students will go to the library with their American History class and through the use of the Reader's Guide to Periodical Literature select a magazine article that has direct bearing on the U. S. Constitution.

Each student will write a one page paper that contains the following:

- a brief summary of the article
- an explanation of the relationship between the content of the article and the Constitution
- a brief discussion of how the information you have read can affect you or your family
- your opinion as the validity of the argument presented by the article.

BEHAVIORAL OBJECTIVES:

a. The student will find, select, retrieve, and use a magazine in order to gather appropriate material to fulfull the assignment.

THINKING SKILLS:

a. critical thinking skills focused on:

1. identify the general problem
2. generate related ideas during search process by thinking up new subject headings
3. analyze entries in Reader's Guide to select appropriate articles
4. evalute magazines to determine if appropriate to satisfy the requirements of the assignment
5. recognize different points of view (bias) in selection of magazine
6. use metacognition when going through the process of using the Reader's Guide to Periodical Literature.

b. dispositions

1. The atmosphere created will be non-judgemental
2. students will be encouraged to ask questions
3. students will be encouraged to take risks
4. students will be grouped with a maximum of four to a table to foster peer conferencing

II. LESSON PLAN CORE

1. The immediate purpose of the lesson will be to teach the students how to effectively and efficiently use the Reader's Guide to Periodical Literature in order to evaluate and select an

appropriate magazine article to fulfill the assignment.

2. Student background knowledge
    a. Students will have studied the U.S. Constitution in American History class prior to coming to the library.
    b. Students will have knowlege of the concept of indexing.
    c. Students will have some knowledge of and be able to distinguish different types of magazines

3. Student Activities
    a. Students will first brainstorm to come up with as many Constitutionally related issues as they can think of.
    b. They will write a list of these issues as they brainstorm so they can have a readily accessible source to refer to when they conduct their individual search.
    c. Students will be able to peer conference during the search process to generate different ideas from multiple viewpoints.
    d. Students will share and exchange individual copies (paper bound issues as well as bound annual issues) of the Reader's Guide while conducting the search.

4. Instructional Materials

The librarian will provide each student with a copy of The Reader's Guide to Periodical Literature to follow as the lesson progresses.

Transparencies of sample entries will be used with an overhead projector to demonstrate how to read and identify the different parts of an entry.

5. Instructional techniques

Each student will receive a copy of the Reader's Guide. The class will follow the librarian and turn to the appropriate page as she demonstrates the following attributes of the Guide:
Date of the issue
Indexing dates included in that issue
Page of Abbreviations of Periodicals Indexed
Page of abbreviations
First page of the actual index

The librarian will stress the importance of knowing the date of the issue and the indexing dates to make certain the student will select an issue that will satisfy his needs. i.e. an article on the eruption of Mt. St. Helen's will best be found in an index covering June 1980.

After the students have become acquainted with the format of the Reader's Guide, a sample entry is displayed on a screen.

Entries are classified as either Simple or Complex. Examples of a Simple Entry are:

Searches and seizures
A matter of good faith (Supreme Court rulings on police searches and the exclusionary rule) M.S. Serrill. il *Time* 124:57+ Jl 16 '84.
U.S. Supreme Court volunteers to decide New Jersey student search-and-seizure case. T.J. Flygare. il *Phi Delta Kappan* 66:294-5 D '84.

Emphasis is placed on the student being able to roughly determine the length of an article by learning that the page(s) an article appears on is indicated after the colon in the final citation of each entry. Students are taught to analyze each entry for illustrations, estimated length , intended audience, and level of writing based on the periodical.

Examples of a complex entry are:

United States. Constitution - Amendments
An all-court press for school prayer. B. Spring. il *Christ Today* 28:60-1+ Ap 6 '84
Amend the Constitution? (call for balanced budget convention) M. Stone. il *U.S. News World Rep* 96:96 My 14 '84

The importance of using cross references whenever applicable and available is also stressed. **See** and **see also** references are explained and examples are displayed on the screen. i.e.:

Freedom of the press
See also
Government and the press
libel and slander
Press law

Gun control legislation *See* Firearms-Laws and regulations

Students are asked to name the title, author, and other different components of an entry while the examples are on the screen. A discussion period follows to clear up any qustions students may have in the actual use of the Reader's Guide. A list of the periodicals subscribed to by the library (both in hard copy and in microform) is provided so students will choose articles readily available to them.

Individual conferences are conducted as the students go about their search. During this conference time the appropriateness of certain periodicals is discussed and students learn how to evalulate the possible content of a magazine based on its intended audience. i.e. An article on abortion in Ms. magazine will have a different treatment than one in Newsweek. Similarly magazines of the political Right will differ in their point of view than those of the political Left.

Students fill out request slips for the magazines they wish to see and the Library staff retrieves the issues from the back issues. It is recommended that when a student finally chooses an article that will satisfy his needs, a copy be made of that article so that there will be an adequate supply of resources left for future classes to use.

6. Lesson Sequence

I. Social Studies teacher restates the requirements and goals of the assignment.
    A. Students brainstorm with the librarian to come up with as many constitutionally related issues as possible.
    B. Students list ideas to create a source for easy referral.

II Reader's Guide to Periodical Literature instruction.
    A. Distribution of a copy of the Reader's Guide to each student.
    B. The students follow along with the librarian as she points various aspects of the Guide.
    C. Using an overhead projector and transparencies, the Librarian covers sample entries, both simple and complex, and shows the students how to analyze them efficiently.

D. Examples of See and See also references are displayed and discussed.

E. General discussion and question period

F. Students work individually and in small groups sharing and exchanging copies of the Guide as they conduct a search for an appropriate magazine article.

G. Individual conferencing between librarian and students to evaluate and assess the appropriateness of certain magazines with regard to indended audience and bias.

H. Retrieval, and final decision of appropriate article

7. Metacognition

The thinking process starts with the class as a whole generating ideas as they come up with a list of constitutionally related issues. Students will apply their understanding of the Bill of Rights and other amendments to the Constitution to current events and vital issues that concern them everyday. When conducting the search, students will choose a topic that interests them, and using the index look it up alphabetically. The length and dates of the indexing period in each issue of the Reader's Guide will determine the number of entries under various subject headings. Student will have to come up with alternative subjects or work in a number of different issues of the Reader's Guide if they do not have immediate success in their search. Factors that will determine their success is whether or not the library subscribes to a periodical, length of an article (too long, too short), type of magazine (too technical, too scholarly, too superficial), student's ability to comprehend level of writing of the article, and student's willingness to accept and deal with any bias possibly inherent in an article.

Students are encouraged to learn how to let their eyes travel down the left hand side of the column when searching for the simple subject heading, and to transfer their gaze to the center of the column when dealing with more complex subjects. Learning how to reject articles based on the estimated number of pages and an understanding of different kinds of magazines comes with experience. Final selection of an article comes after a student has skimmed an article and has made a decision based on comprehension, length, and personal interest of an issue.

III TRANSFER

The brainstorming process forces students to use divergent thinking skills. The generation of new, unique, varying ideas is applicable in all situations where group dynamics are put to work to to come up with ideas for discussion or for further research.

The demonstrated ability of a student to take a basic constitutionally guaranteed right (i.e the right to bear arms) and relate it to a current social issue (gun control), can be transferred to the study of history and how it affects society today and how one can learn from the past.

Recognizing and analyzing the different components of an entry to arrive at a decision can be transferred to analyzing any written problem.

The emphasis placed on efficiency demonstrated by quick scanning of the Reader's Guide , familiarity with the format of the guide, and the ability to reject entries due to inappropriate length and magazine type can be transferred to any situation where a student will gain efficiency in a task by recognizing and discarding irrelevant information.

The student will select one magazine article from a large number available to him. He will have to categorize the differing magazines the articles appear in; he will have to examine the alternatives open to him and rank them in order of desirability. This evaluation process will help him choose the best alternative open to him. The thinking skills involved in this selection process can be applied to any situation where the student will have to conduct a research project and choose the best materials available to him for him to attain his final goal.

Once a student masters the use of the Readers' Guide to Periodical Literaature he will find it relatively east to use all other indexes.

Lesson Plan for Grade One

Our Solar System and Its Nine Planets

Ann Temple, Student Teacher
With Mary Ann Pellerin, Ph.D.
Central Connecticut State University

I. Objectives

- A. Behavioral Objectives:
  The students will compare and contrast information about the nine planets and draw conclusions about them in respect to their position near the sun.
  The students will:
    1. View the filmstrip, A Visit to Our Nine Planets, by Walt Disney.
    2. Compare the nine planets in the filmstrip and decide which they would like to live on.
    3. Discuss general or specific (depending on the age group) points about the film.
    4. Look at planet models cut and hung to scale, and draw conclusions about them with the help of teacher questions.
    5. Create their own solar system with construction paper circles cut to scale.
    6. Draw conclusions about planets in respect to their position to the sun.
- B. Thinking skills
    1. Observing the filmstrip to discover likenesses and differences among the planets.
    2. Recalling likenesses and differences viewed.
    3. Representing those likenesses and differences by constructing their own models of the planets.
    4. Identifying relationships of the planets comparing and contrasting them by:
        - a. Size
        - b. Temperatures
        - c. Nearness to the sun.
    5. Grouping and classifying planets according to size.
    6. Ordering the planets according to their placement in the solar system.
    7. Summarizing and integrating thoughts about ways to live most comfortably on the various planets.

II. Disposition/Attitudes

A. Focus
1. Internal locus of control
2. Collaborative learning
3. Non-judgmental atmosphere nurturing:
    a. Open-mindedness
    b. Brainstorming
    c. Risk-taking
    d. Discussion activity
    e. Interaction
    f. Communication
    g. Creativity
    h. Sharing
4. Non-threatening atmosphere for individual work
5. Students will be encouraged to ask questions
6. Total group involvement activity
7. Supportive
8. Challenging
9. Freedom to select planet based on one's own interest
10. Time to read and study independently
11. Tolerance for others' ideas
12. Students actively involved
13. Teacher provides structure/design and asks questions and responds
14. Students discuss
15. Encouragement to come up with solutions to problems

B. Tap
1. Freedom to express a variety of knowledge
2. Time for interaction to problem solving and group discussion

III. Lesson Plan Core

A. Immediate purpose of lesson
1. To use the names of the planets and identify them relationship to the sun.
    a. Size
    b. Temperatures
    c. Nearness to the sun.
2. To understand that the climate on the planets depends upon their distance from the sun.

B. Student background knowledge and skills)
1. This lesson was originally initiated in response to a child's stated interest and questioning.
2. An understanding that the earth is one of nine known planets.

F. Lesson sequence
  1. Introduction - Motivating Question: "If you could live on any planet, which one would you pick?" Why?
  2. Show the filmstrip.
  3. After the filmstrip, ask questions similar to the following:
     a. Have you changed your mind about the planet on which you'd like to live?
     b. Why?
     c. If you were an astronaut going to your planet, how would you have to dress?
     d. If you were a scientist looking for a new planet on which to live, which one would you pick?
     e. How would you change it?
     f. Look at Mercury and Pluto. How are they alike? How are they different?
     g. If you were to group these planets, how would you do it?
     h. How many groups would you make?
  4. Pass out the construction paper cut-out circles, glue, large manila paper and crayons.
  5. Students will create their own solar system with the circles
     a. Using a yellow crayon, first color a large half circle on the left edge of the paper to represent the sun.
     b. Next glue the various sized circles in correct planet position order.
     c. Label each circle with its representative planet name.
  6. Note: it may help to draw a line through each planet to show its path around the sun.

G. Metacognition
  1. Inner speech, imagery
     The students will express their own understandings about the planets.
     For example: One child said, "I'd make the earth to be a bigger planet like Jupiter, because the earth is too loud."
  2. Attitudes toward self-worth, the task, effort
  3. Cognitive processing
     a. Evaluating their own thinking
     b. Revising their own tKhinking

   3. Students should be able to make inferences about the planets based on their own understanding of:
      a. Size (larger, smaller)
      b. Temperature (hot, cold, warm, cool)
      c. Relationship to the sun (far away, close to)

C. Student activities
   1. View the filmstrip, A Visit to Our Nine Planets.
   2. Compare the nine planets in the filmstrip and decide on which planet they would like to live.
   3. Discuss general or specific (based on maturity levels) points about the filmstrip.
   4. Look at the planet models, cut and hung to scale and draw conclusions about them with the help of teacher questions.
   5. Create their own solar system model with construction paper circles cut to scale.

D. Instructional materials
   1. For planet models:
      Supplies: colored paper, scisors, string, 9 blank index cards
   2. For students' seat work:
      Supplies: colored paper, scissors, glue, large manila paper (one for each student)
   3. Filmstrip: Walt Disney's A Visit to Our Nine Planets
   4. Books:
      a. Branley, Franklyn M. The Planets in Our Solar System. New York: Thomas Y. Crowell, 1981.
      b. Ford, Adam. Spaceship Earth. New York: Lothrop, Lee and Shepard Books, 1981.

E. Instructional techniques
   1. Facilitating group discussion
   2. Individual research by the teacher
   3. Individual presentation
   4. Individual conferences
   5. Student writing if doing suggested follow-up activities
   6. Brainstorming
   7. Oral reading by teacher
   8. Webbing
   9. Modeling
   10. Motivating
   11. Demonstration
   12. Questioning

IV. Transfer

- A. Application of these thinking skills
  1. Math - grouping other things according to size, proximity, color, and shape
  2. Art - drawing concepts envisioned
  3. Language arts - contrasting and applying rules dealing with vowels and consonants toward making up a new language for their own imagined "perfect planet."
  4. Alphabet - One child suggested grouping the planets by first letter.
- B. Follow up activities

  Students may:
  1. Create their own imaginative "perfect planet" on paper.
  2. Write a story about their ideal planet on which to live.
  3. Make up a new language for their "perfect planet."

TO THE TEACHER:

Directions for creating the planet models:

1. Using colored construction paper and scissors, cut out two of each planet according to the scale in Branley's book, The Planets in Our Solar System. Make sure the size of each planet is doubled so they can be seen easier by students in the back of the room. The book, Spaceship Earth by Adam Ford may help you decide on the colors to use for each planet.

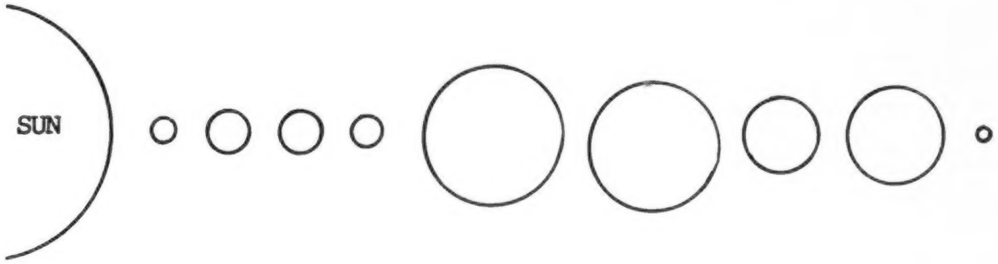
2. After the circles are cut, separate them into their pairs. With one of the pairs on top of the other, make a cut from the outer edge of the circle to the center. Separate the circles. Turn them so that the cuts are facing each other and slide them together to form a three-dimensional planet. Tape the slits so the paper does not fall apart.

3. On each of the nine index cards print the planet names (one planet per card) front and back. These cards will be hung with five inches of string below the planet models.

4. Planets are now ready to be hung from the ceiling. Using string that will be fastened to the top of each planet. Use the book, The Planets in Our Solar System, by Franklyn Branley to get the correct distance between each planet and the sun. Choose one wall to represent the sun.

Directions for creating seatwork:

Use Branley's book. Cut out enough circles for each child. Use a smaller scale for the seatwork so that the solar system may be shown on a piece of 12 x 18 piece of paper. It would help to use the same colored construction paper as the models. Each child will receive nine circles. (Older children could cut out their own with the help of stencils) Circles should be put in correct order: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto and look something like this:



Lesson Plan for Grade Five

Revolutionary War: The Battle of Lexington

Cathy Valentino
Classroom Teacher
Scotland School
Ridgefield

I. Objectives

Students will be able to draw their own conclusion after hearing various points of view on who fired the first shot in the Revolutionary War.

A. Behavioral objectives
Students will:
  1. Identify causes for differences in point of view.
  2. Research actual accounts of what happened in Lexington.
  3. Present their viewpoint in a persuasive manner.
  4. Evaluate various viewpoints.

B. Thinking skills
Students will:
  1. Evaluate credibility of a source based on bias and frame of reference. [Evaluation]
  2. Analyze the similarities and differences of viewpoint. [Analysis]
  3. Collect and organize information for a logical presentation. [Synthesis]
  4. Draw a conclusion and present this information in an essay. [Application]

II. Disposition/Attitudes

A. Non-judgmental activity of drawing a sneaker
B. Non-threatening atmosphere for work in library
C. Encouragement to come up with solutions to problems

III. Lesson Plan Core

A. Immediate purpose of lesson
  1. By using the question "Who fired the first shot at the Battle of Lexington?," students will understand that history cannot always be accurately described by one person. It sometimes takes seeing various points of view in order to arrive

at one's own conclusions. In this lesson two criteria will be used to evaluate point of view—physical, and emotional points of view.

2. To use the research skills to locate and then select relevant material on who fired the first shot.
3. To organize their findings into a persuasive argument to present to the class.
4. After hearing all the arguments students will draw their own conclusions as to what transpired at the battle. This will be done in the form of an essay.

B. Student background knowledge (prior knowledge and skills)

Students must:

1. Know the elements of an essay
2. Have basic knowledge on the battle of Lexington and problems leading up to this event
3. Know the elements of an oral presentation
4. Have had instruction on selecting relevant material when notetaking

C. Student activities

1. Create their own drawing of a shoe
2. Roleplay a situation with opposing viewpoints
3. Brainstorm in regard to viewpoints
4. Research actual accounts
5. Present their findings orally
6. Write an essay on their own viewpoint

D. Instructional materials

1. Map of Lexington
2. Video camera and monitor

E. Instructional techniques

1. Group lecture
2. Discussion
3. Individual research
4. Individual presentation
5. Individual conference
6. Student writing

F. Lesson sequence

1. Point of view—two ways of seeing something (physical and emotional)
    a. Physical: Have students sit in a circle around a shoe. Draw what they see from their place. Brainstorm on differences and similarities.

- b. Emotional—role play a scene with two siblings and their mother who is trying to convince them to share one child's favorite possession. Discuss their emotional points of view and why they differ.
  - 1) Brainstorm all people present at battle
  - 2) Categorize these people into groups
  - 3) Select a group to research their viewpoint using actual accounts

2. Research
   - a. Select a character category in order to do the research from a point of view.
   - b. Carry out library research.
   - c. Use criteria for presentation:
     - 1) Must identify self so bias can be identified on emotional level, and
     - 2) Use map to show physical viewpoint.
   - d. Individually videotape each student's character account of the battle. This may be presented in any way so long as criteria are met.
   - e. After all students are taped, show videotape to class.
   - f. Discuss the similarities and differences of their viewpoints.

G. Metacognition
As each step of the lesson is covered, the students and teacher will identify the thinking skills involved and discuss them.

IV. Transfer

A. Application of these thinking skills
Students will:
1. Evaluate others' viewpoints in the Civil War, and in an advertising unit.
2. Do a term paper on the Presidents to use their research skills.

B. Follow up activities
1. Evaluate the points made in the videotaped presentations and write an opinion paper based on the findings of others.
2. Draw a map where student thinks the best view of the battle took place.

APPENDIX

GRADE USE CHART

Grade	Author	Subject	Page
K	Narciso	Storytime	75
1	Sisson	Colorful Words	115
1	Sisson	Writing Sentences	113
1	Temple	Solar system	127
2	Ashmore	Communities	11
2-4	Lantini	Foods	52
3	Giancola	Communities	39
3	Giancola	Class Meeting	42
4	Smith	Reading	117
4-5	Gilbert	American Indians	44
5	Buckland	Analyzing Sand	23
5	Narciso	Writing Telegrams	79
5	Narciso	Creating a Database	84
5	Sinclair	Creative Writing	108
5	Valentino	American Revolution	133
7	Leahy	Economic Geography	55
7	Roberts	Newspapers	91
8	Southard	Readers' Guide	120
8	Denehy	Reading—Letters	30
8	Carroll	Readers' Guide	26
11	Anselmo	American Authors	1
11	Barako	Translating Latin	21
11	Joy	Immigration	49
12	Anselmo	International Relations	5
12	Foerster	Chaucer	34
Gifted	Rosenberg	Word Use	99
K-up	Pellerin	Metacognition	88

Computer Programs To Make You THINK!

1.	The American Challenge	Mindscape, Inc. 3444 Dundee Road Northbrook, IL 60062
2.	Car Builder	Weekly Reader Family Software Middletown, CT 06457
3.	The Factory	Sunburst Communications 39 Washington Avenue Pleasantville, NY 10570
4.	Microzine	Scholastic, Inc. 2931 East McCarty Street P.O. Box 7502 Jefferson City, MO 65102
5.	Rendezvous	Edu-Ware Services, Inc. P.O. Box 22222 Agoura, CA 91301
6.	Silent Service	Micro Prose 120 Lakefront Drive Hunt Valley, MD 21030
7.	The Super Factory	Sunburst Communications 39 Washington Avenue Pleasantville, NY 10570
8.	Tranquility Base	Management Science America, Inc. 3445 Peachtree Road, N.E. 8th Floor Atlanta, GA 30326
9.	Where in the U.S.A. is Carmen Sandiego?	Broderbund 17 Paul Drive San Rafael, CA 94903-2101
10.	Where in the World is Carmen Sandiego?	Broderbund 17 Paul Drive San Rafael, CA 94903-2101

ELB/sk
3/87

Prepared by Emma Lou Benedict, East Ridge Middle School, Ridgefield

The Use of Computer Programs for Critical Thinking Practice

Dr. M. Ellen Jay
Page Elementary School, Silver Spring, MD

The following are some examples of ways we have used computer programs to encourage critical thinking.

1. Mathematics related programs:

King's Rule - Sunburst

This program gives the student three numbers. The student has to generate additional examples which fit the pattern until the rule is identified. When three numbers are suggested by the student the computer says yes they fit the rule or no they do not. After a series of five wrong suggestions the computer provides an additional example that does fit the rule. When the student thinks the rule has been identified a quiz can be requested. By answering five examples correctly tokens can be won allowing the student to progress through varied levels of difficulty.

Example:

Computer gives	1	3	9	
Student guesses	5	7	11	NO
	(Student thinks rule is odd numbers)			
	1	4	16	NO
	(Student thinks rule is 1st number times 2d number, and 2d number ties itself)			
	5	15	45	YES
	(Student thinks rule is the number times 3)			
	2	6	18	YES (verifies rule)

We use this on the big screen monitor with total class participation. We ask students not to state a rule at first, but rather to continue to give examples allowing other students to catch on for themselves. When the group is ready for a quiz we discuss the rule and check that it fits all examples. The documentation gives the possible rules used at the different levels of difficulty. Reading through these can give the teacher ideas to help students when they get stuck.

Teasers by Tobbs - Sunburst

This program provides practice in addition and multiplication at six levels of difficulty. At the easiest levels all necessary information is given to answer the questions directly with the computation of one addition or multiplication problem. At the middle levels of difficulty the student is required to work backwards using subtraction or division to gain the necessary information to answer the question. You cannot move Tobbs to another box. You must answer the question in the box in which he appears. At the most difficult level there is more than one correct answer. The student does not have enough information to arrive at a given value, but rather the computer will accept a range of numbers. Each successive answer must build upon the previous answers and the answers given throughout must mesh.

Examples: (Easy) (Difficult)

+	3	7	+			+	21	?
4	7	?	2	7	?	42		
6	9	13	4	5				17

Reading related programs:

Puzzler - Sunburst

This program forces students to make predictions. A page of a passage is presented on the screen. After reading it the student selects to make predictions as to what the object is. Predictions have to be made before the next page of the passage can be read. Predictions can be revised after each page is read. The student can go back to previous pages to verify predictions or find rationale for changing them. At the end you are not given "The Answer." The strength of this program is to have students make a prediction, cite supporting material from the passage, and change predictions by citing additional information as it becomes known to the reader. Students learn to use facts and inferences to support their predictions.

Hide N Seek - Sunburst

Students are given the initial sentence of a passage. Then they are givean a choice of three possible next sentences. By using context clues they build the passage sentence by sentence. When they think they have it in correct sequence, the computer will check it. If an error has been made the computer will highlight the sentence that is incorrectly placed. The students can then see the three choices and select again. They rework their way through the story making any other changes required because of the initial change. This process continues until the students have the story in correct sequence. Passages represent narrative, informational, and procedural excerpts from literature. There are three levels of difficulty on three different disks. The easiest is geared to 4th grade reading level, the next to middle school grades, and the top is at 9th grade level, I believe.

Thinking skills programs:

Memory Castle - Sunburst

The purpose of this program is to help students develop strategies for remembering a series of facts. You are a knight and the computer gives you a list of places to go and one thing to do in each place. Your job is to go to the places in the correct order, and to do what you are directed to do in each location. At the easy level you are given three places and things to remember (total of six items). At the middle level it increases to six places and six tasks (total of twelve items), and the difficult level shows one screen of six sets and a second screen also of six sets (for a total of twenty-four items to remember). You gain a prize for each successfully completed quest. When working with a total class we discuss possible strategies for accomplishing our task. They usually suggest dividing the work load. We do a couple of examples that way, and then I suggest that we do not have the help of a group. How can an individual remember a series of facts? We experiment with making the list into a story line or using the initial letters to make a nonsense word, or using initial letters to create a sentence with words starting with the same letters. We usually find that the storyline works best because it is more meaningful.

For example, if the list were:

Go to the stairway; go up it; go to the cloakroom; get the purple cloak; go to the kitchen; eat an apple; go to the cemetery; find King George's grave; go to the fireplace; put a log on the fire, . . .

We might think to ourselves:

> At the top of the stairs I saw a knight in a purple cloak eating an apple on his way to King George's grave. He brought a log back for the fire.

Factory - Sunburst

This program introduces the student to three machines: one punches holes, one paints stripes, and the third rotates the square. The second level has students build a factory by sequencing these machines and producing a product. The third level involves critical thinking. At this level the student is given a product to produce. By looking at, and analyzing the product, the student sequences the necessary mechanical functions to produce the model product. The product is shown next to the model and is described as flawed if it doesn't match exactly. The student is given the choice of trying again or of being given a diffferent product to try to produce. There are three levels of difficulty within this part of the program. A nice additional factor is that the disk can be booted as a turnkey system.

Right Turn - Sunburst

This program provides a grid with nine boxes each filled with a distinctive item. This grid is then rotated or flipped in some way. The student has to figure out what has been done to the original grid to produce its companion. A new grid is presented and the student has to create its companion by manipulating it in the same way as the computer manipulated the original grid. This is really a matter of visual analogies. The program is designed to be used with color or attributes; shape becomes the attribute in the latter.

BIBLIOGRAPHY

Participants in the Institute submitted annotated bibliography cards for the articles they read, and these were used to create the following bibliography of materials on thinking skills.

Albrecht, Karl. "Easy Games to Develop Your Problem-Solving Skills." Brain Building. Englewood Cliffs , NJ : Prentice-Hall.

The author divides the thinking process into seven critical mental processes. He explains sequential games using each process. The games require little or no preparation.
Buckland.

"Are Your Kids Learning to Think?" Changing Times, December 1983.

A good article to explain how we as teachers are falling short in the teaching of thinking skills. Interesting information on higher level thinking skills along with concrete suggestions of ways to increase and improve thinking skills. An added feature is a section on "Teaching Kids to Think—What Parents Can Do."

Bauman, Robert P. "Teaching for Cognitive Development," The Andover Report, p. 83-99.

Correlation between Piaget's theory and problem solving. Strategies for raising the cognitive level of older students are discussed.

Beyer, Barry K. "Critical Thinking: What Is It?" Social Education, n.d.

Critical thinking is the process of determining authenticity, accuracy, and worth of information or knowledge. Claims the criterion for acceptance as a critical thinking skill is that it seeks to differentiate truth from falsehood, fact from fiction. Each critical thinking skill consists of three kinds of attributes—a set of procedures, distinguishing criteria, and a set of rules. The clues and criteria must be taught and learned for a student to become a successful critical thinker.
Joy.

Blair and Turner. "Are Basic Skills Instruction and Independent Learning Compatible?" *Middle School Journal*, February 1984. p. 6-7.

The authors state that an emphasis on basic skills has a negataive effect on independent learning. As evidence for this they cite results of their own status study of the reading attitudes of middle school students. They call for greater clarification by the school of the connection between basic skills and the ability to learn independently.
Barako.

Brandt, Anthony. "Teaching Kids to Think." *Ladies Home Journal*, September 1982.

Matthew Lipman, a professor of philosophy at Columbia University, founded the Institute for the Advancement of Philosophy in 1974. Through the use of his novels and teacher training program children are being taught to question, debate, and make choices. Increased reasoning ability and sharper thinking skills are being attributed to this method of teaching philosophy to children.
Giancola.

Campbell, David. *If You Don't Know Where You're Going You'll Probably End Up Somewhere*. Argus Communications, c. 1974.

This career guidance book encourages you to set goals, stay active mentally, choose your friends carefully so you will be challenged and encouraged to stretch yourself, and choose your occupation carefully since your job influences your lifestyle most importantly. He tells you to think of life as a long, never-ending pathway stretching out ahead of you. It's written in a light easy to read style with colorful illustrations that will surely appeal to high school or middle school students for whom it can be a valuable resource for career guidance.
Carroll.

Carlisle, Joanne. *Reasoning and Reading Level 1* (grades 6-8), Educators Publishing Service.

Workbook program involving word meaning, sentence meaning, paragraph structure, and reasoning. "The workbook is based on the belief that these areas are intertwined in the normal process of understanding and evaluating whatever we read."
Smith.

Cogitare. Vol. 1, No. 1, May 1985.

Cogitare is a monthly newsletter on thinking skills. Articles within this newsletter contain curriculum suggestions for implementing thinking programs, book selection, as well as opinions from the state on thinking.

Costa, Arthur. "Mediating the Metacognitive." Educational Leadership, November 1984. p. 57-62.

The author defines metacognition as the ability to plan a strategy consciously step-by-step, and then to evaluate the efficiency of the finished products. However, he contends that metacognitive skills must not be taught directly, but must be incorporated into teaching methods. He suggests activities such as helping students plan prior to delving into assignments, encouraging them to generate questions, discussing consequences of particular actions, and clarifying chronology. However, the most positive influence, according to Costa, is teacher modeling.
Rosenberg.

Costa, Arthur. "The Principal's Role in Enhancing Thinking Skills," Developing Minds, ASCD, 1985, p. 29-32.

In order for thinking skills (as well as any other aspect of the curriculum) to take root and develop the principals must take an active role. The ways to enhance this process are: 1) creating intellectually stimulating school conditions for staff and students; 2) using available resources; 3) modeling thinking practices. Most importantly, research and practice show that mandated programs rarely flourish.

Costa, Arthur. "Teacher Behaviors That Enable Student Thinking." Developing Minds: A Resource Book for Teaching Thinking. ASCD, 1986.

Costa's research offers conclusive proof that it is the teacher who effects the learning process either negatively or ppositively. Student thinking is best developed when teacher skills include questioning techniques, informaation processing skills, classroom structuring talents, response mechanisms, and consistent role-modeling patterns. The ultimate success of student thinking is therefore in the control of professionals who concern themselves with the process of learning.
Narciso.

Costa, Arthur. "Thinking: How Do We Know Students Are Getting Better At It?" n.s.

Costa lists ten indicators of the increasing use of thinking skills. Teachers need not use standardized tests to determine the effectiveness of their teaching for thinking. Problem solving behavior can be observed daily if we know how to look for it.
Barako.

DeBono, Edward. CORT 1, Teachers Notes. Pergamon Press, 38 pages.

DeBono explains the philosophy of his creative program and discusses the details of his approach.

DeBono, Edward. "Critical Thinking Is Not Enough." Educational Leadership, September 1984.

This article briefly introduces DeBono's CORT program. 60 lessons, one 35 minute lesson per week for three years, CORT develops two aspects of perception—breadth, and change. It divides thinking into two stages, develops PMI, and teaches thinking directly as a skill.
Sisson.

Doherty, Edith J.S. and Louise C. Evans. How to Develop Your Own Curriculum Unit. Synergetics Press, 1984. Chapters II & III.

The authors offer ten basic thinking skills and twelve thinking processes incorporating these skills for use in curriculum development. Selecting Bloom's Taxonomy as a base for cognitive skills, they add Williams' classification of createive skills to allow the two realms to intermix. The detailed thinking processes encourage students to produce new ideas, to become skillful in inquiry and to understand how thinking skills relate to the real world.
Gilbert

Eisner, Elliot W. "Creative Education Today." Education Digest, February 1986. p.14-17.

Eisner suggests three understandings children must possess for creative education: 1) important problems have several solutions, 2) opportunities should be provided for children to formulate their own questions and problems, and 3) develop students' sensitivity to their world experience. There is a need to enculturate and to emancipate children simultaneously. Needing attention are: 1) culture of the school, 2) curriculum, 3) qualities and skills of teachers, and 4) evaluation procedures and feedback. A fifth need is to educate those adults outside the school. This article implies that it is up to teachers to do the PR regarding creative education.
Pellerin.

Ennis, Robert H. "Critical Thinking and the Curriculum." National Forum, vol. 65, No. 1, Winter 1985.

In the wake of growing educational interest in critical thinking, Ennis addresses some problems facing educators trying to embark on critical thinking instruction: What critical thinking skills should be taught; should the skills be taught as a separate course or included in existing courses; how much transfer is there of critical thinking skills and how can this be measured; need to develop quality teaching materials, try out sample curricula, and retrain teachers to teach skills. Ennis ends with the hope that the current interest in critical thinking will overcome obstacles and endure.
Gilbert.

Feldman, Ruth D. "What Are Thinking Skills?" Instructor, April 1986. p. 35-39.

Thinking skills can be taught through problem solving. Open-ended, realistic problems, and reading, listening and writing with a purpose and goal lead to successful problem solving. Teachers' questions are the single most important component that leads to clearer student thinking. Specific strategies, either taught or self-designed, are methods for kids to solve problems. Teaching metacognition through activities with specific plans, directions, and constraints leads to successful problem solving. Intelligent behavior stems from an open-minded reflective manner. Students learn from role models that persistance and self-confidence lead to good problem solving skills.
Southard

Frith, Greg H. "A Major Objective of Social Studies," Learning House.

Frith believes a major objective of social studies is teaching critical thinking. He goes over the seven propaganda devices used in politics. The article concludes with application strategies.
Valentino.

Gail, Meredith. "Synthesis of Research on Teacher's Questions," Educational Leadership, November, 1984, p. 40-47.

Relviewing the literature Gail found that recitations have a greater effect on intentional rather than incidental learning because they force the student to attend, decipher meaning and generate overt and covert responses. She also found that higher levels of questioning do not always provoke higher level responses; students must be taught response requirements of the different types of questions because of the manner in which most curricula is structured; recitation type questions are helpful in learning textbook material. Perhaps teachers should be helped to use these types of questions more effectively.

Hartman, Hope and John Barrell. "The Flip Side of Cognition: Attitudes Which Foster Thinking." Paper presented at International Society for Individualized Instruction Conference on Teaching Thinking Skills, Newark, NJ : October 1985.

The importance of affective domain in any attempt to improve cognitive or thinking skills is emphasized. The authors list eight attitudes which impact the level and kind of cognition occuring in classrooms. These are predispositions, self-concept, curiosity, reflective style, locus of control, openmindedness, ambiguity and risk, and achievement anxiety. The authors suggest classroom practices which can foster positive attitudes. The authors argue that only the presence of such positive attitudes will bring about the critical thinking skills many claim are necessary.
Foerester.

Hart, Leslie A. "A Response: All Thinking Paths Lead to the Brain."

Hart is highly skeptical about the efficacy of teaching "thinking skills." He would emphasize making use of what we know historically about the human brain. A solid scientific base of information exists about human brain function and educators should use this to look at the brain as the organ for learning. Students' poor performance levels are due not to a lack of training in thinking skills, but to a failure of classroom teaching. The classroom is to blame, not the teacher, as it forces non-productive teaching rituals. Learning should be the priority of educators. The brain resists direct instruction, yet handles all meaningful learning, emotions, and behavior. An adequate brain-compatible learning theory must be developed that will lead teo a better learning climate.

Hechinger, Fred. "Writing and Thinking." New York Times, February 7, 1984.

The article outlines the philosophy and the basics of a program called "Writing to Learn" by James Howard, senior associate of the Council for Basic Education. Teachers of all learning areas are challenged to accept the responsibility for the teaching of writing since "learning to write is learning to think." Examples are included to illustrate how math, French, and science concepts have been enhanced through the program's approach.

Writing is not merely the domain of the English/LA teacher. This article highlights some of the work recently done by content area teachers to develop writing and consequently thinking skills in the classroom. Important ideas for all teachers: 1) Do assignments yourself before assigning them to students, 2) Writing is a major means of promoting and clarifying thinking. By asking students to write (not merely answering factual questions) about given subject matter, teachers help students learn about what they know.
Smith.

Hunkins, Francis P. "Helping Students Ask Their Own Questions," Social Education, April 11985. p. 293-96.

Students need to take control of their learning and thinking through the questioning process. They need to be aware of types of questions and kinds of thinking they employ to solve problems. Students need to generate a questioning plan that will help them process information and think critically about data gathered. Reaction avenues, as outlined by the article, guide students through planning, implementing, and assessing the critical thinking processes.

Hunt, Morton. "Seven Steps to Better Thinking." Reader's Digest, April 1983.

Dr. de Bono, a psychologist and professor of investigative medicine at Cambridge University in England, assembled seven skills for improving thinking. Reading through and applying these skills to everyday situations, as well as applying them to your classrooms, will alter and broaden your thinking skills thereby helping your students do the same regardless of the level you teach.
Giancola.

Jackson, Roberta. "Thumbs Up For Direct Teaching of Thinking Skills." Educational Leadership, May 1986. p. 32-36.

The author, a Virginia school teacher, has developed a working model designed to teach critical thinking through direct instruction. She observed that there is very little transfer from :workbook performance knowledge" into student writing. By having students define the term "analysis" and experiment with the process, she evolved a way to teach the thinking skill of analyzing for personification in language arts. Her successful model consists of five basic steps which are outlined in this succinct article.
Narciso.

Perkins, D.N. "Thinking Frames." Educational Leadership. n.d.

The article focuses on: What is thinking made of so that it can be improved? By what sort of learning process can people learn to think better? How can we tell if a particular approach to the teaching of thinking is a good one?
Smith.

Rudin, Brad. "Teaching Critical Thinking Skills." Social Education, vol. 48, #4, April 1984.

Based on the premise that the ability to think critically prepares a student for life situations, seven critical thinking skills applicable to social studies, as well as other areas, are discussed. An activity and explanation is given for teaching each of the following skills: Analyziang statistics; recognizing valid generalizations, finding cause and effect relationships, distinguishing relevant from irrelevant information; recognizing unstated assumptions; analyzing points of view; and recognizing inferences.
Southard.

Rudin, Brad. "Teaching Critical Thinking Skills," Social Education, April 1984. p. 279-81.

Author cites seven social studies skills with a brief activity for each designed to help students become active learners by being critical thinkers.
Joy

Scriven, Michael. "Critical for Survival." National Forum, Winter 1985.

The author of this article believes educators do not allow survival training in the most vital issues today—drugs, sex, alcohol. By our not dealing with these issues we create an aura of forbidden mystery. Research shows that unless you deal with something very close to the real case under the proper guidance, students cannot handle the real case.
Valentino.

Seebohm, Caroline. "The Mind of the Child." Parents Magazine, September 1983. p. 62-64.

A brief description of Edward de Bono's formulas and how parents can use these thinking strategies to settle daily problem-solving situations.
Latini.

Slife, Brent and Ruth Cook. "Developing Problem Solving Skills," The Education Digest, February 1, 1986.

Assuming that the motivation to overcome obstacles is natural, the article presents environmental obstructions of this natural tendency in children. The authors recommend that a portion of the day be set aside for problem solving —apart from activities involving right/w
rong answers. It is viewed as a subject linking the other academic areas as students realize that their skills can be ransferred to diverse subjects.
Ashmore

Steele, Cheryl. "Student-Assisted Instruction (SAI): Teaching As We Learn." National Association of Secondary School Principals Bulletin, January 1985. p. 84-87.

An article outlining procedural steps in establishing student-designed learning centers. Once students become proficient in Bloom's Taxonomy of Learning, they apply these steps to a personally chosen topic and design a hands-on learning center for their classrmates. All learning centers are catalogued for future teacher and/or student use. The author is an assistant principal in a middle school.
Latini.

Sternberg, Robert. "Teaching Critical Thinking, Part 2: Possible Solutions," Phi Delta Kappan, December, 1985.

Sternberg presents an overview of his :Intelligence Applied,: a year-long course in thinking skills. His emphasis is that an effective program of this sort must focus on problems of the real world. In this way, transfer of skills is maximized. The program is intended for students of at least average ability.

Suhor, Charles. "Thinking Skills in English—And Across Curriculum." ERIC Digest, 1984.

This document digests current issues concerning critical thinking and how it should be taught—in isolation or infused into each subject area. Particular emphasis is placed on "the centrality of language" in the curriculum. Because language skills are closely related to significant learning, it is perceived as a way of critical thinking.
Pellerin.

Swartz, Robert J. "Restructuring Curriculum for Critical Thinking." Educational Leadership, May 1986. p. 43-44.

Swartz describes examples of restructuring traditional content to teach for thinking. He cites examples of teaching skills that use evidence in reasoning about cause and effect built upon inference and real-life situations. Important to this process is consistent use of specific skills and terminology, and helping students see the similarities among the various examples used for teaching each skill. This method, "conceptual infusion," requires committed teachers, school system support and structure, and time for teachers to develop, try out, and evaluate those skills appropriate for teaching critical thinking. Pellerin.

Swartz, Robert. Restructuring What We Teach to Teach for Critical Thinking. Boston: University of Massachusetts.

Swartz's main proposition is that in order to teach critical teaching skills, teachers must be allowed the time to work together to understand them themselves. He presents examples of teachers who successfully teach critical thinking by restructuring their curricula and use teachable moments to infuse these skills into everyday lessons. Positive classroom climate and direct instruction using consistency and appropriate terminology will also aid in the development of critical thinking as a way of life. Rosenberg.

Teacher's Guide for the Basic Competencies in Reasoning, Vermont Department of Education,1979. pp. 1-2, 39-41, 43-45.

Vermont's guide defines reasoning as "the ability to approach day-to-day problems with intelligent decision-making skills." This guide contains grade K-12 sample teaching strategies and mastery-level examples of their list of basic competencies in reasoning. These include: Problem solving, classifying and organizing, making reasoned judgments, and research skills. Carroll

Wirtz, Robert. "Some Thoughts About Materials and Problem Solving," Developing Minds, ASCD, 11985.

The focus of this article is on the need for striking a balance in math instruction between rote learning and understanding of concepts. Refers to Piaget's developmental model. Many activities at higher cognitive levels should be provided in an effective math program.

TEXTBOOKS USED FOR THE INSTITUTE:

Jay, M. Ellen and Hilda L. Jay. Building Reference Skills in the Elementaray School. Hamden, CT : Library Professional Publications, and imprint of the Shoe String Press, 1986.

Worsham, Antoinette M. and Stockton, Anita J. A Model for Teaching Thinking Skills: The Inclusion Process. Fastback No. 236. Bloomington, Indiana: Phi Delta Kappa Educational Foundations, 1986.